The leader in network knowledge ■ www.networkworld.com

May 23, 2005 ■ Volume 22, Number 20

A Wider Net

#### There's battle tested ... and then there's the Israeli military

The Silicon Valley of the Middle East.

**■ BY ANN BEDNARZ** 

t an age when many young adults are just entering the workforce in entry-level positions, Gidi Cohen was leading an elite software development unit charged with building information security solutions for the Israeli military.

"I was 21, running significant budgets, with tons of projects under development

and Software and lots of people reporting

to me," recalls Cohen, who served from 1987 to 1992 in the Israeli military's intelligence corps.

Having command over large projects at such a young age See Israel, page 14



ff[Israel is] a great place to innovate, but it can be difficult to sustain that effort. 77

Philippe Szwarc

CEO, Arel Communications

#### is scheduled to release a commercial version of the Lightweight Directory Access Protocol (LDAP)-based directory called Red Hat Directory Server. This will include services and support for a monthly subscription fee, and give

ing middleware stack.

**■ BY JOHN FONTANA AND** 

Red Hat next month is expected

to provide a missing link in the

open source software infra-

structure with its release of

source code for the Netscape

directory server it acquired last

A few weeks after that free

server is made available, Red Hat

Red Hat another piece in its evolv-

**JENNIFER MEARS** 

year from AOL.

Red Hat is expected to make the announcement at its Red Hat Summit June 1-3, although the company would not confirm that timetable.

■ IBM, Red Hat join

Networks drive car of the

forces vs. Sun. Page 27.

Besides creating a data store to manage user and policy information for au-

Directory on tap

for open source

thentication and authorization, the addition of an open source directory could lead to an expansion of security and identity management tools on Linux and other open source platforms that may raise their enterprise value.

"Without a directory, it's been difficult to position Linux as an enterprise system," says John Enck, an analyst with Gartner. "The directory is core to everything. If you look at where all the vendors are going, everybody is trying to create the directory as a foundation piece

> and tie their stack of software to it."

The open source community has been trying to ad-

dress the directory issue, but the OpenLDAP project, which Red Hat implements and ships with its operating system, has been criticized for not providing scalability to complement the so-called open source LAMP stack: Linux, Apache, MySQL and Perl/PHP/

In comparison, Netscape released its Directory Server in 1996

See Red Hat, page 8

# **Businesses follow carriers' MPLS lead**

**■ BY JIM DUFFY** 

NEW YORK — MPLS is not just for carriers anymore.

That was one key message emanating from the MPLScon conference in New York last week, as companies now are reaping the

benefits of Multi-protocol Label Switching technology that was created in 1997 to bring more ATM-like characteristics to IP. Corporations looking to improve QoS, facilitate any-to-any communications and, converge several legacy and next-generation ser-

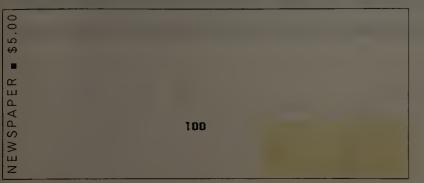
vices on a common infrastructure are taking a long look at MPLS. MPLS was created to improve

the price/performance, scalability and flexibility of network-layer routing. It does this by using "labels" in the fields of packets to reduce route-processing overhead, steer traffic onto explicit paths and provide improved behavior to packet routing.

This label-switching technique was later identified as a way to engineer traffic on IP backbones, facilitate QoS and construct VPNs. And though these capabilities were initially targeted at service providers migrating from See MPLS, page 10

are nothing. Carmakers are looking at everything from in-vehicle Internet access to remote diagnostics and information services for the connected car.

Satellite navigation, motorist-aid services and built-in entertainment systems Page 70 DOUG CHEZEM



# THE NEW GLO

COURTESY: THE WORLD'S LARGEST, WHOLLY-



Reserve your place at the absolute center of a new, instantly accessible world of frictionless commerce. A world we pioneered. Over a single IP connection, all your business applications can be seamlessly converged and totally secured over Global Crossing IP VPN, VoIP, iVideoconferencing™ services. Over a single IP connection, you are moments away from your offices, your sales staff, your partners and anywhere in the world managed

# BAL VILLAGE.

OWNED, CONVERGED, GLOBAL IP NETWORK.



by engineers and support staff who understand what customers need. And you can have this new, accessible world without changing a thing in the infrastructure you have in place now. Sound too perfect to be true? Ask the 40% of the FORTUNE 500° companies we're doing business with today. The New Global Village. It's time you moved in. For more detailed information, point your browser to globalcrossing.com.



One planet. One network.™ Infinite possibilities.

#### THIS CHANGES EVERYTHING.

# OS, Application and Hardware Management. Just one console.

Now, Dell™ PowerEdge™ administrators only need one console to deploy, manage, monitor, patch and update software and hardware for Microsoft® Windows® and Red Hat® Linux® environments. With all those features fully integrated, Dell OpenManage with Altiris Management Suite for Dell Servers helps get systems up and running fast, saving IT time and resources.

Take some time to see for yourself.

Visit dell.com/altiris4 today for a demonstration and whitepaper.



altiris

MIDNE DUT OF CHANGE. GET MORE OUT OF NOW.



Click www.dell.com/altiris4 Call 1.866.212.9342

DELL OPENMANAGE™/ALTIRIS®

**MANAGEMENT SUITE for DELL SERVERS** 

sponsible or errors in typography or photography. Dell, PowerEdge, Dell OpenManage and the Dell logo are trademarks of Dell Inc. Altiris is a registered trademark and Server Management Suite is a registered trademark of Red Hat, Inc. Linux is a registered trademark of Microsoft Corporation. Red Hat is a registered trademark of Red Hat, Inc. Linux is a registered trademark of Microsoft Corporation. Red Hat is a registered trademark of Red Hat, Inc. Linux is a registered trademark of Microsoft Corporation.

# News

- **8 BMC** overhauls management software.
- 10 Chip vendor supports dual WLAN, VoIP technologies.
- 11 Start-up touts on-demand resources.
- **12 ESnet** adopts high-speed optical MANs.
- 13 3Com to upgrade IP PBX software, offer new IP phones.
- **15 Microsoft** targets small retailers.
- 17 Collaboration pack gains features.
- **88 Montilio** looks to reduce file server delays.
- **88** Intel preps PC management advances.

#### **Net Infrastructure**

- 19 Telemedicine helps victims of stroke.
- **19** Avaya CEO on VolP issues.
- 21 **Charlie Bruno:** Stuck in VolP limbo with Vonage.
- **24 Special Focus:** Web filtering tools handling ever-larger jobs.

# **Enterprise Computing**

- **27** New appliances put the squeeze on data.
- 27 IBM, Red Hat target Solaris with Linux.

#### **Application Services**

- **29** Utility energizes applications.
- **29** IBM introduces configuration management software.
- 32 Scott Bradner: A not-all-powerful plan of action.

#### **Service Providers**

- **61** Vonage to offer its first business service.
- **61** Verizon Wireless revamps pricing.
- 62 Johna Till Johnson:

The cost of mismanaging information can be enormous.

Sony's MFM-HT75W widescreen TV/LCD monitor provides multiple video sources on one display. Page 66.

#### **Technology Update**

- **65** Fuel cells fire up handhelds.
- 65 Steve Blass: Ask Dr. Internet.
- **66 Mark Gibbs:** The RSOD and challenging responses.
- 66 Keith Shaw: Cool tools, gizmos and other neat stuff.

#### **Opinions**

- **68 On Technology:** Another angle on the Cisco/Juniper battle.
- 69 Sandra Gittlen: The art of collaboration.
- 69 Winn Schwartau: Mad as hell, switching to Mac.
- 90 BackSpin: Shattered Mac illusions.
- 90 'Net Buzz: What to do about 'DDoS-based extortion.'

#### Management Strategies

■ 78 10 troubleshooting tools: Network managers share the essentials every data center shouldn't be without.



■ CONTACT US Network World, 118Turnpike Road, Southborough, MA 01772;

Phone: (508) 460-3333; Fax: (508) 490-6438; E-mail: nwnews@ nww.com; STAFF: See the masthead on page 10 for more contact information. REPRINTS: (717) 399-1900

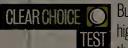
SUBSCRIPTIONS/CHANGE OF ADDRESS: Phone: (508) 490-6444; Fax: (508) 490-6400; E-mail: nwcirc@nww.com; URL: www.subscribenw.com

# NetworkWorld Features

## Networks drive car of the future:

Automakers are turning cars into networked devices that use standards such as Bluetooth and Wi-Fi to offer a communications platform, advanced diagnostics, and even the ability to sense and avoid collisions.

Page 70.



Buffalo's TeraStation is a high-powered NAS box that offers 1T byte of

storage, but lacks some advanced management features. **Page 76.** 

Our ongoing series continues with a spotlight on business continuity: Find savvy strategies for the emerging new data center, plus a look at four hot technologies for fail-safe enterprises.

The New Data Center:

next-generation IT

architecture.
Stories
begin
after
Page 32

#### www.networkworld.com

#### Breaking News Go online for breaking news every day. DocFinder: 1001

#### **Exclusive**

#### **Extending a wireless access point**

A reader asks: Is it possible to connect multiple wireless access points to a single high-gain outdoor aerial if I made a custom splitter cable? He asks because he wants to double the number of users in his building with wireless laptops.

DocFinder: 7245

#### Firewall and LAN best practices

Have suggestions for a user setting up a new network? **DocFinder: 7246** 

#### **Desktop management Buyer's Guide**

If intrusion-prevention is on your to-buy list, head to our updated Buyer's Guide, where you can find and compare the specifics on 19 different applications.

DocFinder: 7247

#### **Network World Radio**

Tracking content at MLB.com

Listen in as Justin Shaffer, vice president and chief architect for MLB Advanced Media, explains how Major League Baseball serves up live streaming audio and video to fans.

DocFinder: 7248

#### **Seminars and Events**

#### Wireless & Mobility: Commanding Broadband Everywhere

Suffering "analysis paralysis" when it comes to Wireless LAN or WAN? The latest wireless services or subscriber units? Wireless tools or apps? This is your breakthrough event, coming to Boston and Denver. Qualify now to attend free.

DocFinder: 7045

#### Online help and advice

#### **Nutter's Help Desk**

NetWare and Windows XP SP2

Help Desk guru Ron Nutter helps a user whose Windows XP desktops can't connect to a NetWare server running NDS 7.

DocFinder: 7250

#### **Home Base**

Creating a crib sheet

No small business should be without a comprehensive written inventory of its software and hardware, Sandra Gittlen advises.

DocFinder: 7251

#### **Small-Business Tech**

USB drives good for backup?

Columnist James Gaskin writes: Enjoy your USB drives, as my son enjoys the one I bought him to back up his notebook at college.

Just don't think you're going to use them to back up several computers, because it won't happen, I promise.

DocFinder: 7252

#### Compendium

A new community platform

Executive Online Editor Adam Gaffin explains why we're migrating our Weblogs and forums to an open source platform called Drupal.

DocFinder: 7253

#### Free e-mail newsletters

Sign up for any of more than 50 newsletters on key network topics.

DocFinder: 1002

#### What is DocFinder?

We've made it easy to access articles and resources online. Simply enter the four-digit DocFinder number in the search box on the home page, and you'll jump directly to the requested information.

6 NetworkWorld 5/23/05

News

#### **Movement afoot on E911 services**

■ The FCC last week issued an order that requires VoIP service providers to offer E911 service before year-end. In a unanimous decision, the FCC said that companies such as Vonage and 8x8 have 120 days to ensure users will be routed to emergency call centers. In order for VoIP service providers to support E911 services, they must strike deals with the incumbent local exchange carriers, BellSouth, Qwest, SBC and Verizon. On the same day the FCC made its order public, Vonage, the largest residential VoIP service provider, with 700,000 customers, announced it had reached such deals with BellSouth and SBC. Vonage previously announced an agreement with Verizon and says it is in talks with Qwest. While the order requires VoIP service providers to support E911, the FCC is not forcing these companies to track when a customer relocates an Internet phone number. This could lead to a problem in which 911 operators might not have the correct location of an Internet caller.

#### IBM, Nortel to collaborate on telecom

■ Nortel has entered into an agreement with IBM to jointly develop products for the telecom industry. The agreement, signed last week, initially will focus on the development of carrier-grade servers for communications providers that will be based on IBM's BladeCenter server design. The two companies have established a 30-person joint development center in Research Triangle Park, N.C., but spokesmen from IBM and Nortel were unable to provide many details on the project, which IBM Business Consulting Services Partner Steve Hasselmann characterizes as a "strategic alliance." In addition to the BladeCenter servers, IBM plans to provide engineering and technical services to help Nortel develop a range of products for multimedia services, VoIP, and wired and wireless broadband services, Hasselmann says.

#### **Wireless LAN initiative stumbles**

■ The IEEE 802.11n task group last week handed a major setback to a vendor group backing one approach to super-high-bandwidth wireless LANs. Members of that group, TGnSync, had moved to adjourn last week's meeting in Australia without taking a second confirmation vote on the group's 802.11n technology proposal. However, a vote was taken and the proposal garnered only about two-thirds of the votes needed for it to be accepted as the basis for a draft standard. That setback means the chief alternative plan, from a second vendor group called World-Wide Spectrum Efficiency, can now be reconsidered, along with the TGnSync plan. Both plans are based on a technology called multiple-input/multiple-output, which proponents say will boost WLAN throughput to greater than

#### COMPENDIUM

#### Phishing justice, frontier style

Neteraft reports that online vigilantes have started taking down phishing sites.

Seems that if fraudsters can take over compromised Web sites for phishing, the vigilantes can use the same techniques to lock out the fraudsters — and post warnings on the site. Now that you are hooked, read more at www.networkworld.

com, DocFinder: 7244.

## **TheGoodTheBadTheUgly**



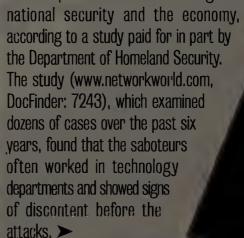
**Amber comes to cell phones.** The wireless industry and the National Center for Missing & Exploited Children have joined forces to bring Amber alerts to cell phone subscribers. The alerts, which help to track down missing children, can be received via text messaging by subscribers to participating carriers' networks. Register at www.wirelessamberalerts.org.



**Risky business.** Only two-thirds of end users in the U.S. surveyed by AllM, a trade group for content management companies, consider the process by which electronic information is managed to be "very important" or "quite important" relative to potential future litigation. This contrasts with 95% of German users and 83% of U.K. users, according to AllM, which surveyed 1,200 end users worldwide.



**Bosses beware.** Revenge against bosses is the primary motivation for those corporate insiders who sabotage computers even though doing so can threaten





www.networkworld.com



300M bit/sec, although the standard will call for a minimum of about 100M bit/sec. That compares with today's 802.11a and 11g throughput of 20M to 24M bit/sec.

#### Google releases enterprise search tool

Google last week made available a free desktop search tool tailored for the workplace—called Google Desktop Search for the Enterprise—about eight months after it introduced a similar tool for consumers. Like its cousin, Google Desktop Search for the Enterprise is designed to let users find information stored in their PCs such as emails, documents and photos. The products share a controversial feature. They take snapshots of every Web page a user views and index the content. Some users have expressed concern this might be counterproductive it sensitive or confidential information is captured as a user surfs the Web. Users can configure both tools not to capture secure HTTPS Web pages. Unlike the consumer product, Google Desktop Search for the Enterprise has a series of installation, distribution, management and security features for IT departments to use when rolling out and configuring the product.

#### SAP aligns allies for SOA platform

■ Several big-name companies, including Adobe, Cisco and Intel, have agreed to embrace SAP's new service-oriented architecture platform, SAP announced last week. The deals follow agreements reached last month with IBM, Macromedia and Microsoft. In 2003, SAP launched its own SOA technology called Enterprise Services Architecture. ESA uses Web services and SAP's NetWeaver middleware and integration platform to let users craft business processes over heterogeneous applications. The new ESA partners will license the technology to optimize their products to run SAP applications.

# Visit us at Info NECC Booth #358 June 27-30 Pittsburgh, PA

# Spam and virus protection at an affordable price.

- No per user license fees
- Prices starting at \$1399
- Powerful, enterprise-class solution

**Barracuda Spam Firewall** 





Order from William Trouble www.barra luda linkwin.L. c.cm

POWERFUL

EASY TO USE

AFFORDABLE

Aggressive Reseller Program

Get more infilibly visiting www.burracupantition c... in IEEE or by calling 1-888-A TI-SPA in 498.3

# BMC overhauls management software

**BY DENISE DUBIE** 

At management software vendor BMC, these days it's all about streamlining.

The company last month said it is shedding 12% of its staff to tighten expenses in the face of disappointing revenue. And this month BMC says it is revamping its product line, consolidating previously separate software packages and simplifying licensing.

The company this year and next will eliminate the Patrol brand it has touted since acquiring the system management technology in 1994 and reinvent its product portfolio under the moniker Performance Manager. Among the new offerings planned is Performance Manager for Servers, a combination of Patrol for Unix and Patrol for Windows.

The changes won't be in name alone. BMC has redesigned its core software so customers get agent-based and agentless products under the same license. Previously, customers needed to buy agent-based Patrol and agentless Patrol Express separately.

Products within the Performance Manager line also will share

a database, a console for configuration and provisioning, and a user interface for reporting.

"The trend right now among management vendors is to fix all the installation, integration and performance problems in their existing tools and supplement them with features to help IT managers get a consistent way to measure performance and availability across their network infrastructure, security and applications," says George Hamilton, a senior analyst at The Yankee Group.

Industry watchers say BMC needed to do something to breathe life into its \$1.4 billion business. It announced last month that preliminary revenue estimates for the fourth quarter of its fiscal year 2005, ended March 31, would fall below expectations, at \$388 million to \$400 million, down from the previous forecast of \$410 million to \$425 million. BMC cited customers' delayed spending as a reason for the lower revenue.

"BMC, and in particular Computer Associates, this year really have to prove they are going to deliver on their product plans to

customers to maintain their installed bases," Hamilton adds.

That includes sorting out and integrating technologies acquired from Calendra, Marimba and OpenNetwork to fill out its long-term business service management strategy. BMC has named Tom Bishop, formerly with Vieo and Tivoli, to lead its technology direction as CTO.

"It's important BMC streamline it's technology because management tools can be expensive, and it needs to keep its customers as the market is going to continue to consolidate," says Lance Travis, a vice president with AMR Research. "The redesigned Patrol will also better serve the company's bigger plans of [business service management] in the long term."

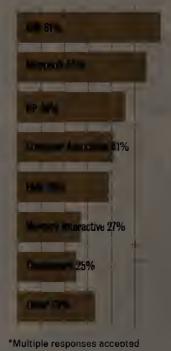
In an attempt to make its software more attractive, BMC is focusing on basics, such as easing installation.

Performance Manager, using provisioning technology BMC acquired via Marimba last July, will distribute agents only to servers that require higher-level management and will do so automatically based on customer configurations. Patrol depended

#### **Crowded field**

BMC is one of a handful of vendors whose products are commonly used for infrastructure management. Here's how vendors stacked up when 56 financial firms were asked about which companies' products they use.\*

0 10 20 30 40 50



on centralized server software, and required an agent be installed on every managed server to deliver on its performance and availability-management promises. Patrol Express was designed without agents to help customers remotely manage systems at branch offices.

BMC customer Marc Machin, senior systems engineer at Lender's Service in Santa Ana, Calif., says he's looking forward to the upcoming changes.

"Anything that could lighten the footprint of management software on a machine would be welcome," says Machin, who maintains six consoles for Patrol applications across a network of 150 Windows servers. "I'd still like an agent on certain servers to automatically take an action or react to an event, but there are more servers that don't need agents than there are ones that do."

In June, BMC says it will start to offer its single-license model to customers under the new brand, and in December the company expects to start shipping new products with the architecture.

#### Red Hat

continued from page 1

and pundits hailed the scalability and administrative controls of the standards-based software, which ignited centralization of corporate directory information. The directory was the foundation for a major U.S. Department of Defense project in the late 1990s to secure military information systems.

Red Hat's commercial version of the directory is a challenge to vendors that have commercial Linuxbased directories but do not open the source code for public consumption. Those vendors include IBM, Oracle and Sun and Novell,

which has ported eDirectory to Linux along with a complement of identity management and security tools.

"Their challenge is the other parts of identity and access management and security around this directory technology; how do they plan to [develop] that aspect of it?" says Ashish Larivee, director of product marketing for Novell.

While the directory only is infrastructure, what it supports in terms of security and access control is mandatory for today's Web-based distributed corporate networks. It is those directory-enabled tools that are key not only to the success of LAMP but also to Red Hat, experts say.

"This is part of Red Hat evolving from just an operating system company to more of a software company," says Gordon Haff, an analyst with Illuminata. "The more significant issue is the difficulty of tying all the pieces together

#### What's LAMP?

The open source community refers to its software stack as LAMP: Linux, Apache, MySQL and Perl/PHP/Python.

HUMMUL	DC301 IPCIOII	
Linux	The kernel and operating system	
Apache	Web application server platform	
MySQL	Database	
Perl/PHP /Python	Development tools	

into a single stack that really works together. That's where Red Hat is moving."

That stack competes with those from IBM, Microsoft, Oracle and Sun.

Red Hat's plan is to open source all of the Netscape technology it acquired under the General Public License (GPL), says Leigh Day, a company spokesperson.

"Open source architecture is our long-term strategy," Day says. "[Red Hat Directory Server] is going to provide another critical piece of business infrastructure that's standards-based for open source architectures. Red Hat is very committed to making sure all of the software that we deliver for enterprise infrastructure is made available under the GPL. We think that's just better business."

Last September, Red Hat spent \$23 million to purchase from AOL the Netscape directory

technology along with the former dot-com darling's Certificate Server for handling digital certificates.

Industry experts say the transition to a directory vendor won't be an easy one.

"They are going to face all the same integration problems that every other directory vendor has faced," says Jackson Shaw, vice president of product management for Vintela, which develops technology to integrate Unix, Linux, Java, and Macintosh with Windows-based systems. "How do I integrate with heterogeneous systems? How do I integrate with the Microsoft directory, the Novell directory? They will have directory synchronization issues, meta directory issues, authentication issues," says Shaw, who helped architect Microsoft's Active Directory.

Red Hat has begun the work. Last month it released a

technology preview with updates to Red Hat Directory Server that included Windows user synchronization, rights control and replication features.

Tim Howes, the co-author of the LDAP specification and architect of the original Netscape Directory Server, says the directory will be good for the open source community. "Like other infrastructural components it is important the directory be robust, stable, and this will help get it there," says Howes, who is now the CTO of automation software company Opsware.

Industry observers say only time will tell the significance of an open source directory.

"If it became a hot open source project, then maybe you build a virtualization engine that competes with virtual directory vendors or a synchronization engine that competes with meta-directory providers," says Jamie Lewis, president of Burton Group. "If it really caught fire, those are the kinds of things that would show this is a significant effort"

Competitors say Red Hat is in catch-up mode.

"Red Hat's move doesn't address the real customer need for a complete directory service or other key identity management requirements customers are looking for like provisioning, access management, rederation and identity auditing, all of which Sun provides," says Don Bowen, director of marketing for Sun's Directory Server Enterprise Edition.

"Adding one more LDAP directory to the mix of existing LDAP directories doesn't help customers with single signon, access management, secure wireless and remote access, desktop management, managing security updates, information protection, smartcard logon, printer discovery," says Michael Stephenson, Microsoft's group product manager for Windows Server. "Active Directory provides customers with these capabilities and more without requiring the customer to do the costly integration work."



Every day, leading Global 2000 enterprises, including the five largest e-businesses in the world, rely on NetScaler to dramatically accelerate application performance. All without adding servers, bandwidth, or consultants.

Perhaps that's why NetScaler is rated #1 in customer satisfaction among Layer 4–7 networking vendors. See what NetScaler can do for you at www.netscaler.com/5x



\*Percent of customers who gave vendor 5-out-of-5 rating for overall customer satisfaction. Frost & Sullivan, May 2005.

2005 NetScaler Inc. All trademarks are the properties of their respective owners.

NET SCALER

#### MPLS

continued from page 1

ATM to IP backbones, a number of companies are finding that they too, can use MPLS to transition their networks.

The Securities Industry Automation Corporation (SIAC), for example, is implementing MPLS VPNs as the basis of its Secure Financial Transaction Infrastructure (SFTI), a network constructed after Sept. 11, 2001, to provide a bulletproof Ethernet access infrastructure for the New York Stock Exchange, the American Stock Exchange and other financial institutions.

SFTI supports more than 600 customers, each with multiple interfaces into the network. The backbone spans nine access centers in six U.S. cities, and customers must connect to at least two access centers using 100M and 1G bit/sec Ethernet.

Customers connect via an IEEE 802.1g Ethernet virtual LAN tag port to an SFTI edge router and then that VLAN is mapped into an MPLS VPN tunnel. The tunnel carries the customer connection to the SFTI service edge router, which connects the customer to the service network that corresponds with the VPN tunnel and VLAN tag ID.

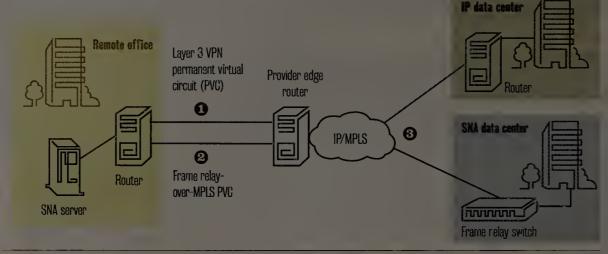
MPLS helps segment and secure customer traffic.

"We guarantee that if you connect to SFTI directly, we're going to give you robust connections to the services of NYSE and AMEX, but if you go through another service provider we can't make that guarantee," said Renzo Silva, technical director for network and firewall management at SIAC

One particular challenge is in

#### Convergence legacy

The state of Illinois is using a Layer 2/3 MPLS infrastructure to converge statewide IP and frame relay networks, and support legacy protocols.



traffic for each state agency.

state to support non-routable legacy protocols, such as SNA, IPX and DECnet.

🚺 Layer 3 VPNs are used to separate IP 🛾 A frame relay-over-MPLS PVC allows the 🔞 Separate PVCs fan out to their respective IP and SNA data centers.

provisioning service, he says.

"It's a moving target for us because every time we provide a new service we have to map that service into an MPLS VPN," Silva said."That provides new complexity as far as [how] the customer needs to be configured, [how] the data center needs to be configured, and how that can be coordinated and correlated to make it an easy-to-understand service for our operators to provision."

MPLS reduced complexity for the state of Illinois. The state's Department of Central Management Services consolidated two statewide networks into one via a Layer 2/3 approach that also enabled support for legacy protocols such as SNA, IPX and DECnet.

One of those networks was the Illinois Century Network (ICN), a statewide IP/MPLS packet-over-SONET infrastructure that provides service to K-12 schools, higher-education institutions, municipalities, museums and libraries. The network connects 6,100 sites and 2 million users, and costs \$25 million per year to maintain.

The state's government network was a private frame relay hub-and-spoke net connecting 42 agencies to a common set of data centers over 1,800 circuits at a cost of \$12 million per year. Budget constraints forced the consolidation of the two networks last year, said Mike Bernico, senior network engineer for the department.

A fully meshed MPLS-based RFC 2547 Layer 3 VPN enabled Illinois to collapse both networks yet maintain traffic separation between agencies by replacing frame permanent virtual circuits (PVC) with MPLS label switched paths, Bernico said.

"A few larger agencies had as many as 600 PVCs resulting in provisioning nightmares and very complex traffic patterns," he said. "Layer 3 VPNs allowed us to remove the complexity of hundreds of PVCs in a very lowimpact way."

To support sites with nonroutable legacy traffic, Illinois opted for Layer 2 frame relayover-MPLS VPNs. This keeps SNA, JPX and DECnet in its frame relav PVC, which then is carried inside an MPLS label switched path.

we wanted 2547 for the long term, but we needed frame-over-MPLS to carry the things we couldn't route," Bernico said. "It gave us the ability to move networks with legacy traffic fast."

One of the challenges with the new network was getting operations staff used to working within an MPLS VPN context, which

uses VPN routing/forwarding instances (VRF) to define the VPN membership of a customer site. A customer site's VRF contains all the routes available to the site from the VPNs of which it is a member.

"Separate routing tables means a new paradigm to learn for operations personnel," Bernico said. "You have to make sure operations personnel understand and have practiced troubleshooting a connection inside a VRF. [They] don't need to understand everything about MPLS, but they need to know how to do their normal job inside a VRF context."

MPLS is not for everyone. The touted benefits of convergence, data center virtualization, flexible bandwidth and cost savings depend on a company's size, needs and budget. Those benefits could be offset by the need to familiarize staff with a new way of doing things and an implementation that might take more time than expected to get off the ground.

"When you're looking at an enterprise MPLS implementation you have to ask yourself, are you doing this because it's strategic in nature or are you reacting to what carriers are telling you you should be doing?" said Ken Owens, senior architect at financial firm AG Edwards. "It's not easy it's not just Boom, plug-and

Read more on MPLS in our New Data Center supplement. PAGE S10

EDITORIAL DIRECTOR: JOHN GALLANT EDITOR IN CHIEF: JOHN DIX

EXECUTIVE EDITOR, NEWS: BOB BROWN ASSOCIATE NEWS EDITOR: MICHAEL COONEY ASSOCIATE NEWS EDITOR: PAUL MCNAMARA

#### ■ NET INFRASTRUCTURE

SENIOR EDITOR: JOHN COX (978) 834-0554; Fax: (978) 834-0558 SENIDR FDITOR: PHIL HOCHMUTH SENIOR EDITOR: ELLEN MESSMER, (941) 792-1061

#### ENTERPRISE COMPUTING

SENIOR FDITOR: JOHN FONTANA (303) 377-9057; Fax: (303) 377-9059 **SENIDR EDITOR:** DENI CONNOR (512) 345-3850; Fax: (512) 345-3860 SENIOR EDITOR: JENNIFER MEARS, (608) 836-8490; Fax: (608) 836-8491

#### APPLICATION SERVICES

SENIDR EDITOR: CAROLYN DUFFY MARSAN, (703) 917-8621; Fax: (703) 917-8622 SENIDR EDITOR: ANN BEDNARZ (612) 926-0470 SENIOR EDITOR: DENISE DUBIE
SENIOR EDITOR: CARA GARRETSON, (240) 246-0098

#### SERVICE PROVIDERS

SENIOR EDITOR: DENISE PAPPALARDO. MANAGING EDITOR: JIM DUFFY (716) 655-0103

#### ■ NET.WORKER

EDITOR: JOHN DIX

#### COPY DESK/LAYOUT

MANAGING EDITOR: RYAN FRANCIS SENIOR COPY EDITOR: JOHN DOOLEY COPY EDITOR: MONICA HAMILTON ASSOCIATE COPY EDITOR: KYLE CONNORS

DESIGN DIRECTOR: TOM NORTON ART DIRECTOR: BRIAN GAIDRY SENIOR DESIGNER: STEPHEN SAUER ASSOCIATE DESIGNER: ERIC ANDERSON

#### ■ FEATURES

FEATURES EDITOR: NEAL WEINBERG SENIOR MANAGING EDITOR, FEATURES: AMY SCHURR OPINIONS PAGE EDITOR: SUSAN COLLINS

#### ■ CLEAR CHOICE TESTS

EXECUTIVE EDITOR, TESTING: CHRISTINE BURNS, (609) 683-4432

SENIOR EDITOR, PRODUCT TESTING: KEITH SHAW, LAB ALLIANCE PARTNERS: JOEL SNYDER, Opus One

JOHN BASS, Centennial Networking Labs: BARRY NANCE, independent consultant; THOMAS POWELL, PINT; Miercom; THOMAS HENDERSON, ExtremeLabs; TRAVIS BERKLEY, University of Kansas; DAVID NEWMAN, Network Test, CHRISTINE PEREY, Perey Research & Consulting; JEFFREY FRITZ, University of California, San Francisco; JAMES GASKIN, Gaskin Compo Services, MANDY ANDRESS, ArcSec; RODNEY THAYER, Cancla & Jones CONTRIBUTING EMITTES: DANIEL BRIERE, MARK GIBBS,

JAMES KOBIELUS, MARK MILLER

#### M NETWORKWORLD.COM

EXECUTIVE EDITOR, ORLINE: ADAM GAFFIN MANAGIRO FOROR: MELISSA SHAW MANACISM EDITINA, ONLINE NEWS: JEFF CARUSO (631) 584-5829 ASSOCIATE ORLINE NEWS EDITOR: LINDA LEUNG, MUUIMEDIA EDITOR: JASON MESERVE SEMON ONLINE GRAPHIC DESIGNER: ZACH SULLIVAN

#### M SIGNATURE SERIES

EDITOR: BETH SCHULTZ, (773) 283-0213; Fax: (773) 283-0214 EXECUTIVE EBITOR: JULIE BORT, (970) 482-6454 CUPY EDITOR: MONICA HAMILTON

EDITORIAL OPERATIONS MANAGER: CHERYL CRIVELLO OFFICE MANAGER, EDITORIAL: GLENNA FASOLD EDITORIAL DEFICE ADMINISTRATOR: PAT JOSEFEK MAIN PHONE: (508) 460-3333

# Chip vendor unites WLAN, VoIP techs

**BY JOHN COX** 

Circuit and chip designer SyChip this week will announce a module that will let vendors offer dual-mode phones that can use a cellular network or, with VolRa wireless LAN to make voice or data calls.

The VWLAN7100 VolP Module combines an 802.11g WLAN adapter with a voir processor and is targeted at manufacturers of smart phones, and PDA/phones such as palmOne's Treo.

ABI Research a few weeks ago predicted that such dual-mode mobile phones would reach 100 million by 2010. In-Stat Principal analyst Allen Nogee is even more optimistic: He predicts 136 million mobile chipsets for cellular and WLAN connectivity by that same date. Companies such as Nokia and Siemens have already begun selling such devices, and dozens more are expected to do so by year-end.

SyChip is one of the first to offer an 802.11g interface for integrated

See SyChip, page 13

# Start-up touts on-demand resources

#### **BY JENNIFER MEARS**

A handful of former Nortel executives have launched a company they say combines telecom-class networking with highperformance computing to create a nearly unlimited pool of server resources that can grow and shrink in response to application demands.

Called Liquid Computing, the company is making a modular-server system that uses a high-bandwidth fiber interconnect to let users shift workloads and reconfigure systems on demand. The company is targeting high-performance computing customers in areas such as biosciences and government. The trials are scheduled to begin this summer. The offering is expected to be generally available next year.

The system is made up of a 36.75-inchhigh chassis that holds 20 modules, including four dual-core Advanced Micro Devices Opteron processors, memory and I/O, and plugs into a common midplane. Multiple chassis can be tied together via fiber-optic cables, and the initial release

will scale to 12 chassis, or 960 processors, says Brian Hurley, Liquid Computing's CEO.

The interconnect is Liquid Computing's key feature. It is a combination of commodity components and proprietary devices that enable fiber-optic lines to have latency of "less than 2 microseconds from

bunch of eight-ways, with any combination of memory and I/O that's required by the application at that point," Hurley says.

Analysts say the idea is similar to blade servers but takes things a step further.

"They're including things such as broadband connectivity, as well as a little bit

**66** They're including things such as broadband connectivity, as well as a little bit more advanced networking capabilities than your run-of-the-mill server blade. 77

Alan Freedman

Research manager, IDC

processor to processor" and throughput of up to 6G byte/sec, Hurley says. He stresses that the proprietary nature of the interconnect is "transparent" to applications. "It's all standard interfaces," he says.

"With a simple software command, we can configure the processors to look like a bunch of two-ways, a bunch of four-ways, a more advanced networking capabilities than your run-of-the-mill server blade," says Alan Freedman, research manager of infrastructure hardware at IDC.

DigitalGlobe, a multimedia firm that sells high-resolution satellite images of Earth, says Liquid Computing will enable it to get more efficient use of data center resources.

Today, the Longmont, Colo., company has idle hardware standing by to provide the huge amount of computing power it needs for just 10 or 15 minutes every hour and a half — the time it takes for its satellite to circle the Earth.

"That's what is so attractive about the Liquid system: First of all, to have that many processors in a single form or single platform and then to be able to dynamically allocate them to where the business needs them and then reallocate them to different tasks," says Mark Hargrove, senior vice president of operations and ClO of DigitalGlobe.

The challenge for Liquid Computing will be convincing customers that what it is offering is better than grid or clustering products that major systems vendors such as IBM, HP, Sun and SGI offer, analysts say.

"They have to differentiate themselves from the major server vendors and networking companies, and show there is a difference and that people don't need to buy disparate parts for the function they can provide in their integrated product offering," Freedman says. ■

and then it hits you://

LINUX IS AS GOOD ON THE DESKTOP AS IT IS IN THE DATA CENTER.

Novell

find out more at novell.com

# Site

## **Site:** Lessons from leading users

# ESnet turns to high-speed optical MANs

■ BY CAROLYN DUFFY MARSAN

GERMANTOWN, MD. — The Energy Sciences Network is adding 10G Ethernet metropolitan-area networks in key U.S. cities in a move that could increase commercial development of this emerging technology.

ESnet is one of the fastest IP networks in the world and ranks with the university community's Internet2 and the U.S. Defense Department's Research and Engineering Network as a leader of network technology.

Run by the U.S. Department of Energy, ESnet supports thousands of government, industry and university scientists who conduct experiments in areas such as high-energy physics, human genomics and climate modeling. Scientists use ESnet to transmit massive data files, access remote computing

and data resources, and collaborate in real time.

"ESnet is the most advanced civilian network that we support," says Jim Payne, senior vice president and general manager of Qwest Government Services Division, which provides ESnet's nationwide backbone, as well as its first MAN. "We're always testing the next-generation technology with them."

ESnet is a nationwide IP backbone linking the Department of Energy's headquarters in Germantown with more than 40 sites, including Oak Ridge National Laboratories in Tennessee, Argonne National Laboratory outside Chicago, Los Alamos National Laboratories in New Mexico and Lawrence Berkeley National Laboratory in California.

Qwest has provided ESnet backbone services since 1999, when it won an eight-year contract worth an estimated \$87.5 million. ESnet's ring-shaped backbone network operates at 10G bit/sec in northern states and 2.5G bit/sec in southern states.

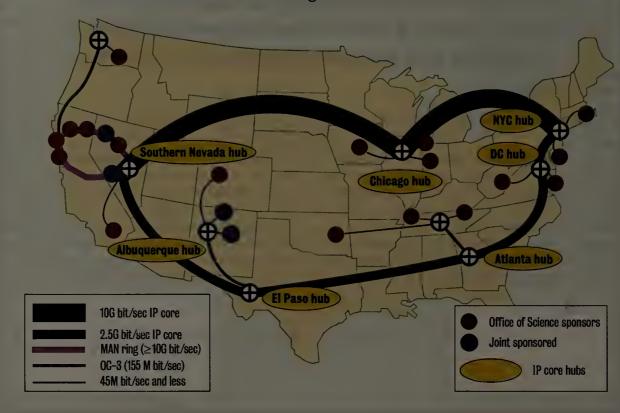
Starting in the San Francisco area, ESnet is adding a fully managed MAN with dual 10G bit/sec Ethernet rings. By 2008, the San Francisco MAN is expected to support more than 100G bit/sec as lambdas are added.

Qwest is building the San Francisco MAN under a fiveyear, \$4.4 million contract awarded in March. This MAN, which will link six sites in the region, is scheduled to be operational by September.

"The system that we're putting in place is a fully wavelength-provisionable network ring that we can add capacity to," says Wes Kaplow, CTO for Qwest Government Services Division. "They're starting with a ring structure with 20G bit/sec, but they have options to go up to 40 or 80G bit/sec. We expect that like the rest of the network this MAN will grow."

#### **The Energy Sciences Network**

Already one of the fastest IP infrastructures in the world, this U.S. Department of Energy network is gaining speed via new metropolitan-area networks. The first, in San Francisco, will be lit with dual 10G bit/sec Ethernet rings.



The Energy Department plans to build similar MANs in Chicago and New York later this year. Department of Energy labs in Virginia and New Mexico are hooking into optical MANs being built by nearby universities.

The high-speed MANs will replace a hub-and-spokestyle design used to provide access to the backbone network. ESnet used conventional circuits ranging from 622M to 2.5G bit/sec for the local links to the backbone. Now ESnet is replacing these circuits with lambdas that can be provisioned on dark fiber MANs.

The Department of Energy's goal is to provide greater bandwidth from its regional sites to the core of its network, as well as to improve redundancy by offering multiple paths from the sites to the ESnet backbone.

"The science community has said very clearly that they have to have networks that don't have single points of failure if they're going to have real science experiments deployed in the network," says William Johnston, ESnet program manager at Lawrence Berkeley National Laboratory. As far as bandwidth is concerned, Department of Energy scientists say that within five years "uniformly the requirement is for 100G bit/sec."

ESnet officials say the MAN architecture will improve the end-to-end performance that users experience when sending massive files.

"Our users demand the ability to transmit huge volumes of data rapidly and in big chunks," says Daniel Hitchcock, a senior technical adviser at the Department of Energy. "It's not like it's one Web page at a time. They may want to transmit a 5-terabyte file."

Qwest officials say the San Francisco area MAN being built for ESnet could be the highest-capacity MAN ever built for one customer.

"We have rings of this capacity where we are the

incumbent local carrier, but this is the biggest MAN we've ever built for an individual customer," Kaplow says.

ESnet's early adoption of 10G Ethernet MAN services is important because of its track record in debugging emerging technologies for the commercial market. For example, ESnet was one of the first customers of ATM in the early 1990s.

"Sprint believes that we actually accelerated the acceptance of ATM by a decade by being willing to put it out there and help them debug this technology and make this stuff actually function," Hitchcock says. "Now we're starting to debug how you do optical networks and how you provision optical networks flexibly so you can set up lambdas from point to point."

With its MAN rollout, ESnet will be among the first customers to integrate regional

and long-distance optical links operating at 10G bit/sec, which is the highest speed possible today. Once these links are built, ESnet will explore how best to dynamically provision optical wavelengths to accommodate the transmission of extremely large data files.

"We're exploring some things for the future where you'd be able to set up circuits on demand or even a whole wavelength on demand for extra large files." Hitchcock says. "You can do it now if you want to set up something for a week or a month. But we're trying to figure out how you can do it in minutes."

The ESnet project is expected to benefit Qwest and Ciena, which are providing optical Ethernet switches for the San Francisco area MAN. Participants in the project will get operational experience integrating 10G Ethernet MAN services with a 10G backbone WAN.

"The ability to run 10G Ethernet services — all of that's now going to be in place. We'll be productizing that capability," Kaplow says. "The experience of building private networks with a wavelength infrastructure, all the block-and-tackle stuff, we'll be able to take that away and leverage it for other customers."

Ciena sees a growing market for the metropolitan wavelength division multiplexing platforms that will be used on ESnet's San Francisco MAN.

"The ESnet project is an important proof point of the adoption of 10G Ethernet technology," says Jeff Verrant, a senior engineer with Ciena. "The Department of Energy consistently sets the stage for industry, including the enterprise sector, to follow its lead in support of emerging applications like networked high-performance computing for modeling and simulation, grid computing and data replication."

See ESnet, page 14

#### NetworkWorld 13

# 3Com to upgrade IP PBX software

#### **BY PHIL HOCHMUTH**

3Com this week is expected to release an update to its NBX operating system, as well as four IP phones aimed at deployments as varied as a CEO's office and a warehouse loading dock.

Version 5.0 of 3Com's NBX operating system introduces more automatic call distributor (ACD) features for call center applications, which in the past had to be added as separate software products. The software also supports advanced call and message features.

The new software lets up to 900 agents operate off of a 3Com NBX, with full callcenter capabilities such as call queuing and routing, the company says. Up to 100 call-center management stations also can be deployed with the software. This lets managers listen in on calls taken by agents, interrupt calls for training purposes, or "whisper" into a call -- where the agent can hear the manager's voice but the customer/caller on the outside line cannot. Version 5.0 also has built-in call center reporting, which in the past required thirdparty software packages.

The built-in ACD functions are important to Nixon, a maker of watches and apparel in Augusta, Ga. "It's attractive to have a lot of base ACD functions already included without the extra cost," says John Roberts, operations director at the company. Nixon, which beta-tested the 5.0 NBX software, can better manage the time of its call center agents with the reporting tools, he says.

Version 5.0 is required in order to use the four new phones. Older phones also will work on the new platform.

Among the new handsets is the 3Com 3103 Manager IP phone, which includes a large LCD display for viewing directories or call logs. It also has a built-in, two-port Gigabit Ethernet switch, which lets a user connect a PC via Gigabit Ethernet to the phone, and then access a LAN from another switch port in the phone — thus requiring only one network cable at a user's desk.

Other new phones include the 3101, an entry-level model with minimal features, and two cordless IP phones that let users



3Com's 3103 IP phone provides a large LCD display for VolP-related applications.

roam up to 1,000 feet with a 900-MHz handset, attached to a base unit that plugs into an Ethernet link and AC power plug. The 3107C cordless phone includes a speakerphone in the base station.

3Com's NBX competes with products from Avaya, Cisco and others.

The NBX 5.0 software costs \$1,000, and the phones start at \$100 for the 3101 and \$365 for the 3103 Manager phone. The 3016C and 3107C are priced at \$414 and \$515, respectively.

continued from page 10

VolP calls. SiGe Semiconductor earlier this month also announced an 802.11g/b module for cellular handsets. Until now, other implementations have supported 802.11b, with a data rate of 11M bit/sec compared with 54M bit/sec for 802.11g. Both companies also stress their products' low power consumption and power management fea-

There's a lot of interest in SyChip's approach. Founded in 2000 as a Lucent Technologies Bell Labs spin-off, the company raised \$20 million in a fourth round of financing last year, for a total of \$63 million. While big silicon vendors such as Broadcom and Texas Instruments are tackling this same area, SyChip's strongest rivals also might be new, such as SiGe, which takes a similar approach and is equally well funded with nearly \$50 million in venture capital.

The 7100 module now is being sampled with a few key SyChip customers. In July, the module will be available in larger quantities for general sampling. The vendor plans to ramp up to large-scale volumes by year-end.■

and then it hits you://

SECURITY ISN'T ABOUT KEEPING PEOPLE OUT. IT'S ABOUT LETTING THE RIGHT PEOPLE IN.

Novell

find out more at novell.com

#### Israel

continued from page 1

accelerated his technology and management experience, says Cohen, who co-founded analytic software maker Vigil Technologies in 1998, and security risk management vendor Skybox Security in 2002. The military atmosphere in Israel supports innovative and independent thinking — attributes you'd expect an entrepreneurial start-up to promote. "That gives you a very good jump-start later on," he says.

Cohen isn't alone in parlaying his military experience into a high-tech career. Israel is known worldwide as a breeding ground for entrepreneurs. With 69 Israeli companies listed on Nasdaq, it's second only to Canada in the number of foreign countries on the exchange. Among the country's more recognizable success stories are security vendor Check Point Software and VolP pioneer VocalTec Communications.

In concentration of new technology companies, Israel most resembles Silicon Valley, says Adam Fisher, a general partner at Jerusalem Venture Partners, a venture capital firm established 12 years ago to help create and fund early-stage companies in Israel. Take any technology startup in the U.S., and odds are that one of its competitors is an Israeli company, he says.

One reason is the independent nature and penchant for risk taking that characterize Israel's 6.5 million people. "They're not afraid to fail or to risk suffering to create a better life," Fisher says. "That willingness to prove themselves over and over again is what created the environment today."

Israelis have learned to create opportunities without dwelling on potentially bad outcomes, adds Philippe Szwarc, CEO of Arel Communications and Software, a videoconferencing platform vendor founded in Israel.

"When you're fighting in war situations on a daily basis in the Israeli military, you can't think 'What will happen if I die?'You don't think about the negative that could happen because not doing anything is an even worse risk," says Szwarc, who was born in France, emigrated to Israel when at 18, and spent four-and-ahalf years in the Israeli navy.

There to assist Israeli visionaries with big ideas are venture capitalists with investment dollars.

Israeli venture capital funds raised \$724 million in 2004 — up from \$14 million in 2003, but still below the \$3.7 billion raised in 2000, according to IVC Research Center. Today, about \$1 billion in capital is available for investment, and the research firm expects Israeli venture capitalists to raise \$1.5 billion more in 2005.

Benchmark Capital, one of the U.S. venture capital firms that have set up shop in Israel, earlier this month announced the creation of a \$250 million fund earmarked for early-stage technology companies in Israel.

Benchmark established an office in Israel four years ago, recognizing that the Israeli high-tech industry at that time had

#### **Mediterranean exports**

Israeli entrepreneurs have left their mark on a growing list of technology companies. Here is a sample:

#### **Public companies**

AudioCodes: Media gateway, server and processing technologies **BackWeb Technologies:** Offline and mobile Web software Ceragon Networks: Broadband wireless devices and software **Check Point Software Technologies:** Security software

Jacada: Legacy integration software

Radware: Network traffic management technology RiT Technologies: Network infrastructure management products VocalTec Communications: Telecom equipment

#### **Private companies**

Blue Security: Anti-spam and anti-spyware technology

**Breach Security:** Application security appliances

Cyber-Ark Software: Security software

Decru: Storage security appliances

nLayers: Application discovery and mapping Oblicore: Service-level management software

**OpTier:** Workload management software

Quarry Technologies: Carrier-class security products

matured to a level where it could be viewed as a logical extension of Silicon Valley, says Nachman Shelef, a general partner in the firm's Israel office." Israel is so similar to Silicon Valley that you can take a company in Israel, treat it the same way as a start-up in Silicon Valley, with the same kind of support, and have the same expectations of success," Shelef says."In every way except as a market, Israel is a major global high-tech center."

One major obstacle Israeli startups have to contend with is the lack of local buyers — every sale is abroad, Fisher says. On the positive side, vendors from the start adopt a global perspective and are trained to look not just down the road, but across the ocean for customers. In an increasingly global market, that mind-set is an asset, Fisher says.

#### Military savvy

While Israel doesn't have scores of local corporate buyers to help sustain its start-ups, it does have one power technology consumer: the military.

Israel's defense industry has had to use the most advanced technology available to make up for what it lacks in size and human resources, says Shelef, who began his career developing communications systems in the Israeli Defense Force between 1977 and 1985.

While the U.S. government procures much of its technology

from commercial providers, Israel tends to develop its own. As a result, young Israeli adults who are subject to compulsory military service — can become involved in significant IT development projects during the time they spend in the military.

"You get to work on advanced projects in an environment where there is not a lot of management in place -- you get to do it, to a certain extent, independently, which helps people think independently" in the outside world, Shelef says. However, it's a rare case when technology developed in the Israeli military becomes the basis for a commercial start-up, he says.

There have been start-ups born out of technology developed in the Israeli military --- for example, the JVP-backed optical component company CyOptics and security vendor Cyber-Ark Software, Fisher says. But more often the value of military service is the experience gained, Fisher agrees.

Military service spawns networking opportunities, too, Fisher says. Entrepreneurs often look up former military colleagues when they need experts. "Israel's small size definitely lends itself to building companies," Fisher says. "Everybody knows everybody." There's no need for headhunters in most situations."

The military also helps cultivate salesmanship, Szwarc says. During his years of service, computers were much less prevalent

than they are today, so we had to make a lot of sales pitches to convince people it was the way to go," he says.

#### **Government assistance**

Culture and military service are two of the pillars that created Israel's high-tech industry, but they aren't the only influences, Fisher says. The presence of multinational vendors such as IBM, Intel and Motorola, beginning as early as the 1970s, helped put Israel on the technology map.

"Some of these companies" largest R&D centers outside of the U.S. are in Israel," Fisher says. "What that's done is build up a generation of technology managers — not just people who can develop but people who know how to manage technology and deliver according to international standards.

The Israeli government, too, has played a role in fostering the country's high-tech savvy with incentives aimed at helping young companies get established.

The Office of the Chief Scientist within Israel's Ministry of Industry, Trade & Labor runs programs to encourage industrial R&D. Among the initiatives are 23 technology incubators designed to help nascent companies develop ideas, form new business ventures and attract private investors. There's also an R&D fund that gives grants to companies to support project development in return for a royalty payment of 3% to 5% of future product sales.

Israel has come a long way toward adopting a more open economy, but it hasn't always been as receptive to entrepreneurialism as it is today, Szwarc says."When I first came to Israel in '82, there was one brand of chocolate, and one brand of coffee, and a lot of companies were government-controlled. It's been a huge evolution, and it's come pretty far and pretty fast," he says. "The successive governments have understood that high-tech was what the country needed."

Looking ahead, a challenge for Israeli start-ups is sustaining corporate growth. Israelis are eager to get ahead and do things by themselves, Shelef says. "They They want to be their own boss." This bodes well for entrepreneurialism but makes it hard to grow a company, Shelef says.

"It's a great place to innovate, but it can be difficult to sustain that effort," he says."That's the next challenge for the Israeli high-tech industry."

#### Site: Lessons from Leading Users

continued from page 12

Today, the market for 10G Ethernet MAN services is "minuscule compared to the rest of the Ethernet market," says Brian Van Steen, senior analyst with research firm RHK "We're still talking about very few circuits today but many service providers are expecting demand for 10G Ethernet MAN services to grow."

Van Steen expects government agencies, financial services firms and popular Web sites such as Yahoo or Google to be among the first customers of 10G Ethernet MAN services. "These customers have all that data, and they have storage requirements and disaster recovery requirements," he says. "For Qwest, building a 10G Ethernet ring for the Energy Department definitely will give them a lot of experience."

Industry observers expect the market for 10G Ethernet MAN services to start to take off between now and 2010.

"This architecture is going to be what any large organization that requires high bandwidth and reliability is going to use," Johnston says. "The model of using lit dark fiber or managed lambdas from a service provider is the clear wave of the future for people who have large-scale data needs."

# Microsoft targets small retailers

**BY ANN BEDNARZ** 

Microsoft last week unveiled point-ofsale software designed to help small retailers automate sales, inventory and store management tasks.

Sophisticated POS packages typically are too complicated and expensive for single-shop retailers, says Mike Dickstein, director of POS solutions in Microsoft's Business Solutions division. The new Microsoft Point of Sale product is geared for these small businesses that don't require server-based systems, he says.

Microsoft POS includes tools for tracking and managing sales, inventory and customer information. The software stores customer information locally on a merchant's machine so salespeople can view customers' previous purchases and preferences.

Instead of manually checking the racks to see available inventory, store personnel can see inventory details right at the register. Remote access options let storeowners check sales and employee activ-

#### **Big numbers**

As many as 3.8 million, or about

of the 8.6 million U.S. retail checkout lanes, are sitting in single-store retailers' shops, according to Microsoft.

ity from a home PC.

More small retailers are looking for PCbased alternatives to electronic registers and manual record-keeping methods, analysts say. According to IHL Consulting Group, shipments of PC-based POS terminals grew 12% between 2003 and 2004. More than 40% of single-store retailers now use PC-based technology, the research firm says.

Microsoft POS is not the vendor's first foray into retail sales software. The Microsoft Retail Management System (Microsoft RMS) suite is based on technology Microsoft gained in its 2002 acquisition of Sales Management Systems.

It's designed for small and midsize retailers with up to 25 locations and includes support for more advanced tasks such as matrix inventory, which is a method of tracking inventory by multiple attributes such as size and color.

"RMS is designed for a retailer with multiple stores who wants to centrally manage the stores, inventory, transactions and customer information," Dickstein says. POS is designed for a single-store retailer or a multi-store retailer that independently manages its stores. Microsoft RMS is a server-based system, whereas Microsoft POS works in a peer-to-peer fashion with other systems in the store, he adds.

Another difference between the two products is application connectivity. Microsoft POS is compatible with Intuit's QuickBooks accounting applications. Microsoft RMS works with a broader range of low-level accounting programs and higher level ERP suites such as Microsoft's Great Plains software.

"This allows [Microsoft RMS] to scale to a midsize retailer who's using a full ERP system. Point of Sale is not going to be used by a retailer that's large enough to have an ERP system," Dickstein says.

A single-checkout-lane license for Microsoft POS costs \$800, as compared with \$1,190 per lane for Microsoft RMS.



More online!

Get the guidance you need at a Network World event exclusively for small to midsize company executives responsible for the effectiveness of their organization's IT systems.

DocFinder: 7239

and then it hits you://

YOU CAN GET 24/7 SUPPORT FOR LINUX

NO MATTER WHERE YOU ARE.

Novell

find out more at novell.com



#### MANAGE YOUR DATA CENTER FROM ANYWHERE...

In today's pressure filled "uptime" environment where a few minutes can cost you big dollars, customer confidence and worker productivity, you can't afford to have IT problems. And, you know fewer administrators and "lights out" control of your data centers gives you a much-needed security buffer. Lantronix gives you access to ALL of your data center assets from anywhere over the Internet via a browser, and total out-of-band access if the network is down. We also offer the only console manager available with a NIST-certified implementation of Advanced Encryption Standards (Rijndael)<sup>†</sup> along with SSL and SSH assuring you the highest level of security available.

#### SecureLinx™

Lights out remote data center management.

#### **Secure Console Managers**

Remote management of Linux, Unix and Windows® 2003 servers, routers, switches, telecom and building access equipment.

- Respond faster and reduce downtime
- Consolidate resources and minimize costs



#### Remote KVM™ via IP

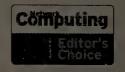
Manage an entire room full of Windows and Linux servers from a single desktop, from anywhere over the Internet.

- Eliminate need for multiple keyboards, monitors and mice
- No client software required

#### **Remote Power Managers**

Control the power, individually, to every device in the data center via a web browser.

- Reboot system remotely
- Ensure safe power distribution and reduce in-rush overload



SecureLinx SLC16
Winner of the Network
Computing Editor's
Choice Award

LANTRONIX®

Network anything. Network everything.



Apply for your FREE
Network World subscription today!

A \$129 value
YOURS FREE

my.nww.com/b04

# Web-based collab pack gains features

#### **BY JOHN FONTANA**

Advanced Reality this week is upgrading its browser-based collaboration package with features for letting customers integrate document sharing, VolP, e-mail and instant messaging systems.

The Jybe 2.0 Server works in tandem with the Jybe 2.0 client, which can be downloaded for free and plugs into Internet Explorer and Firefox. The client adds two buttons for inviting end users and sharing documents.

The server features a conversion technology that can transform PowerPoint, Excel and Word documents into HTML so users can share them using only a browser. The server also works with corporate directories to support access control. The Jybe 2.0 client integrates with Microsoft Outlook's



More online:

Get the information that's critical to your VoIP success. Attend a Network World event exclusively for IT executives responsible for the effectiveness of their organization's VoIP initiatives.

DocFinder: 6927

address book and buddy lists from IM clients so end users can find colleagues for collaboration sessions. Jybe also integrates with Skype, a VolP desktop client.

The Jybe software is designed to provide users with a straightforward collaboration environment based on client software already on corporate desktops. The Jybe client software, which is less than 1M byte, must be downloaded but is the only browser modification required.

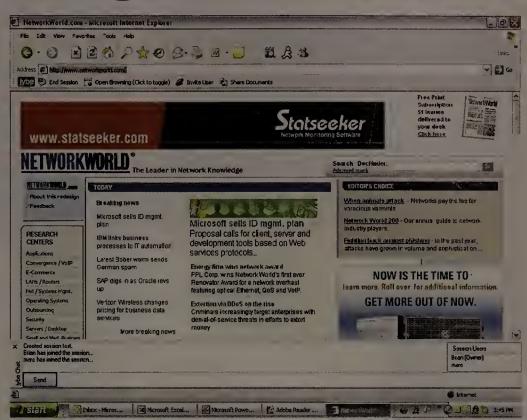
Northern Illinois University (NIU) uses Jybe to support a virtual research service, where users can chat with a librarian who can direct them to resources during a shared browser session.

"This has been so easy to set up and so easy to use," says TJ Lusher, assistant dean of automated library systems at NIU in DeKalb. "The server software takes so little bandwidth you don't even know it is running," says Lusher, who hopes to have 5,000 users by year-end.

Jybe lets multiple users view one URL at the same time. The URL can be a Web page or part of a Web-based application. A security mechanism prevents users from sharing password-protected Web pages or applications unless each user has his password.

With Jybe, users don't share screens. They share only the small bit of data contained in a URL, and that saves bandwidth.

The new server software also lets companies set up their own internal collaboration platforms without having to go through a Jybe server run by Advanced Reality.



Advanced Reality's collaboration package lets multiple users view Web pages with one browser.

The server also adds a number of features, including designating a session leader who can activate certain collaboration features for session participants, the ability for all users in a collaboration session to see what other users type into form fields, a coscrolling feature that keeps every user at the same place on a Web page, and a button to send invitations to collaboration sessions via e-mail. Advanced Reality will eventually

extend the invitation feature to IM, according to company officials.

Jybe compares with resource sharing services from Web conferencing providers WebEx and Microsoft, and competes with products from vendors such as Docutek.

The Jybe server runs on Windows 2000 and 2003, and the .Net Framework. The server is priced between \$5,000 and \$10,000, depending on configuration.



# THE Price and Performance Leader in Power Protection Technology!

Backed by an 80-year history of trusted reliability, Tripp Lite offers a complete line of reliable power protection solutions to shield computers, servers, hubs and other equipment from all power problems. Tripp Lite products provide a full range of premium features that allow you to customize your protection solution to suit your specific needs. Best of all, Tripp Lite products are typically priced lower than comparable competitive models!

#### **UPS Systems**

A full line of award-winning models with standby, line-interactive or on-line operation. 300VA to 30kVA capacities.

#### Surge Suppressors

Protect AC, modem/fax, Ethernet and coaxial lines with over 60 models. Up to 12 outlets available.

#### Cables & KVM Switches

A wide selection of cables and connectivity products for every application, including KVM switches with up to 32-ports.

#### **NEW PRODUCTS!**



3-Phase **UPS Systems** Feature true on-line operation and 3-phase

input and output.



32-Port Matrix KVM Switch Delivers superior server control by up to four independent users.



4-Port USB 2.0 Ultra-Mini Hub Links multiple devices to one computer.

**NEW AND IMPROVED** 

Find the perfect UPS solution quickly and easily with Tripp Lite's updated UPS Selector Guide.

Visit: www.tripplite.com/nww2

Tripp Lite World Headquarters • 1111 West 35th Street, Chicago, IL 60609 • Tel: 773.869.1234 • www.tripplite.com



# They want upgrades. They want options. They want them all yesterday.

(Looks like you've got it covered.)

No matter what you need in technology, you can count on CDW. Our account managers and product specialists can get you quick answers to any questions you might have. And with 1000 top brands and access to the largest in-stock inventories in the industry, you can be sure to get the products you need when you need them. So give us a call and find out first hand how we make it happen. Every order, every call, every time.



# Nei mirastructu

**Site:** Lessons from Leading Users

# Telemedicine helps victims of stroke

**■ BY JASON MESERVE** 

Massachusetts company is looking to use videoconferencing technology to extend critical care to stroke patients in rural hospitals.

Brain Saving Technologies (BST) of Wellesley is working with UMass Medical Center in Worcester and three of its affiliates to put video endpoints and dedicated Internet access in each location, which will let neurologists in Worcester consult with emergency room doctors and patients at the remote sites. The impetus behind the move is a Massachusetts law that requires emergency medical technicians to bring patients exhibiting signs of a stroke to a hospital that has a neurologist on staff 24 hours a day, bypassing nearby hospitals that might not meet the requirement. Similar laws are on the books in New Jersey and Florida, with more pending in other states.

With BST's system, stroke patients can be brought to participating member hospitals, where a Tandberg Intern II portable videoconferencing unit connects the ER physician and patient with a dedicated neurologist at UMass Medical.

The neurologist sits in a room with a Tandberg 1500 or 3000 endpoint and two screens, one to see the patient and one to view the CAT scan of the patient's head. There are two endpoints at UMass for handling multiple calls and for failover.

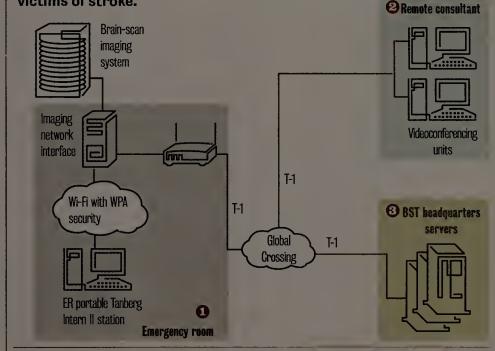
"The patient, family, ER physician and consulting [neurologist] all feel like they're in the same room," says Stuart Bernstein, president and COO of BST. "The patient [if conscious] can see the consulting physician and ask questions."

The consulting physician has far-end camera control and can pan, tilt and zoom the camera on the Intern II to get a better look at the patient. All of the participating hospitals use the same imaging technology, which make it easier to send high-resolution images taken at the member hospital with the consulting neurologist. The images also can be shared in the videoconference consultation using Tandberg's DuoVideo technology, although at a lower resolution, which lets the patient and family see the area of

When stoke occurs, and one does every 45 seconds in the U.S., according to the See Telemedicine, page 21

#### Help is in sight

Brain Saving Technologies (BST) is installing videoconferencing at UMass Medical Center and three of its affiliates to help more quickly handle



 An affiliate will send brain-scan images over a dedicated T-1 to the consulting neurologist.

2 A 768K bit/sec video call connects 3 BST's data center monitors the the patient, emergency room doctor and family with the remote

network and will provide failover support if needed.

Commodity Ethernet switch maker **SMC** earlier this month announced its first 10G Ethernet switch — the TigerSwitch 10G. The switch is aimed at aggregating 10G links from wiring closet switches, or as a small backbone device. The eight-port, fixed-configuration box can support up to 160G bit/sec of bandwidth, llowing all ports to run at full-duples 10G bit/sec. The Layer 2 switch offers several options for 10G optical transceivers, or physical ports, ranging from 150 feet to 10 miles. The switch will be available this month starting at \$8,000 for the switch, with optics ranging from \$2,300 to \$9,000.

# **Avaya CEO on VolP issues**



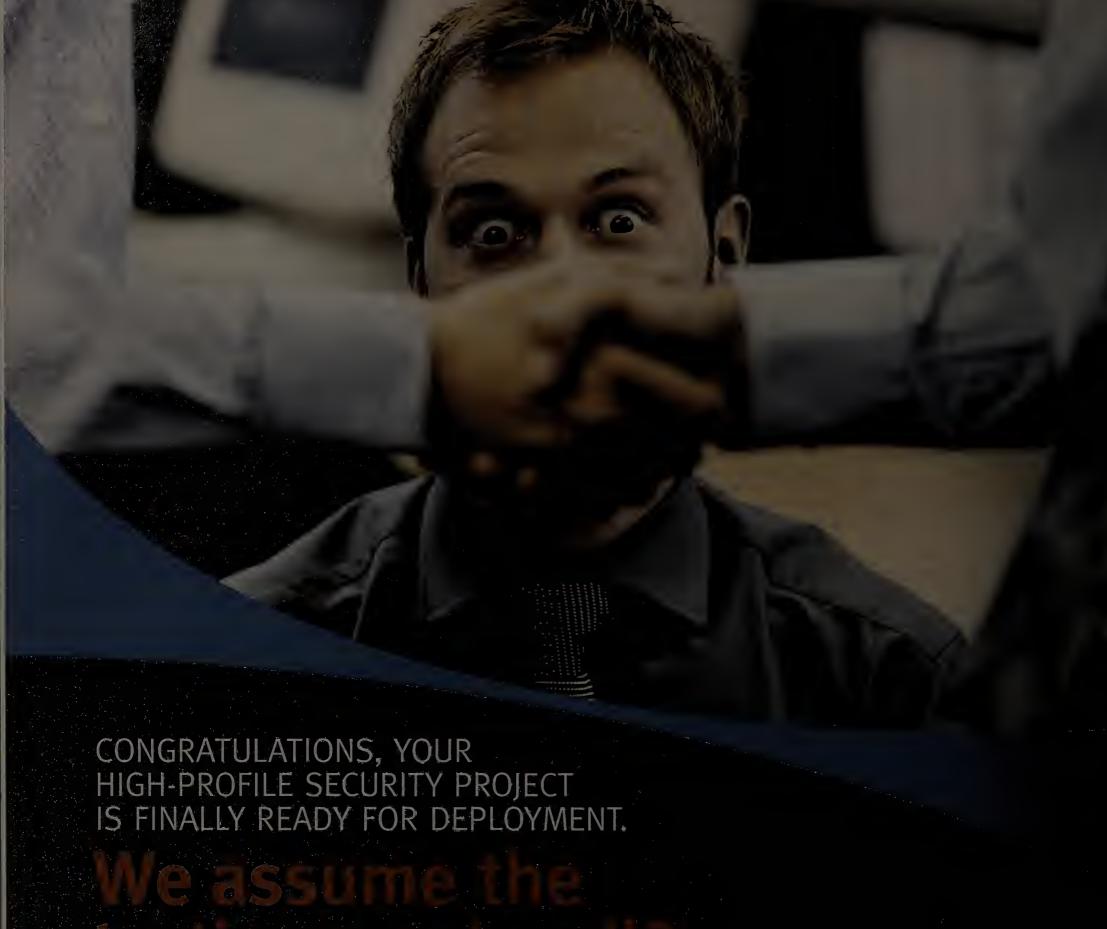
Avaya was borne out of AT&T/ Lucent's legacy. But since its 2000 launch, the enterprise telephony vendor has tried to recast itself as an enterprise applications company. with a focus on voice. Recent moves include the migration of Avaya's legacy PBX to a Linux-based server application, and the introduction of an application server for partners

and users to develop VoIP-integrated software such as applications that integrate VoIP and messaging with ERP software, Web sites or portals. Avaya CEO Donald Peterson recently discussed the company's evolution, as well as current trends in the enterprise VoIP market, with Network World Senior Editor Phil Hochmuth.

#### How does Avaya's IT- and applications-approach to telephony affect Avaya's partners, customers and its own product development?

They're either going to change their businesses or struggle with the evolution. That's not a new story. There is still a TDM installed base that needs to be serviced, and there will be a significant revenue opportunity for folks. But the longerterm value opportunity will be in this new world. By creating our own application server, in some ways we're trying to give an advantage to people who have written code for Avaya telephony products in the past. In the future, we will put the call manager and communications manager into an [IBM] WebSphere-like platform, where people would write their applications. That will most certainly happen over time.

See Peterson, page 21



IT security is more vital than ever, and testing is the only way to ensure its success. With Spirent testing solutions, you can prevent our white paper Putting Security to the Test, cal 1-800-927-2660 or download that www.spirentcom.com/go/securitytest



Juniper Your Net.



"We're from the future, Stanley, and whether you like it or not, you're the chosen one, the change agent who's going to save this Sinking network. So, drop the donut and get ahold of Juniper."

#### NETWORK EXCELLENCE

#### J-Series & JUNOS, Always Performance Perfection.

Are you sinking in a patchwork of network complexity? Can you count on your network to deliver the security and predictability that your business needs to move to VoIP or to run networked ERP applications? Or to gain the flexibility and cost advantages of moving remote and branch office connections from leased line to IPSec VPN?

Simply leave the Status Quo for unprecedented simplicity, predictability and platform independence: Juniper's **J-series**. The J-series, and our modular **JUNOS** operating system, is perfect for extended and distributed enterprises with business-critical application – ensuring superior security and quality over a converged IP network. Now forward-thinking enterprises, government organizations and research & education groups have a better alternative in forward-looking platforms:

- Superior Security: Dedicated resources offer the most advanced defense from outside threats while giving you complete control, even under attack. Add new filters and policies directly, quickly, easily.
- Unprecedented Uptime: JUNOS architecture allows multiple functions to run independently, keeping minor issues from becoming major problems. And keeping enterprises (and network managers) secure in fact, just hit "rescue" for speedy system recovery. What's more, our next-generation CLI means accurate configuration. Legacy "routers" can only wish for parallel multi-function excellence.
- Performance Predictability: Congestion-ending architecture ensures the most important applications receive top resource priority, so you maintain incredible control and throughput during
- Reduced Operational Complexity & Costs: Ourclean-code configuration and consistent release schedules require minimal effort to set up and maintain – no wasted time on constant patches and upgrades.

the most demanding times.



SPECIFICATIONS Platform	J2300	J4300	J6300
Size	<b>1</b> U	20	20
Site Connections	2xT1/E1/Serial	2XT1/E1/Serial to 8xT1/E1	2xT1/E1/Serial to DS3
Fixed LAN Ports	2xFE	2xFE	2xFE
WAN Interface Slots	n/a	6 Open Slots	6 Open Slots
Fixed WAN Interfaces	2xT1 or 2xE1 or 2xSerial	n/a	n/a
WAN Interface Modules	n/a	2xT1/2xE1/ 2xSerial/2xFE	2xT1/2xE1/ 2xSerial/2xFE/DS3
Memory	256 or 512 MB DRAM	256 or 512 MB DRAM	256/512/1024 MB DRAM
Redundancy	No	No	Power
Additional Software Licenses	Stateful Firewall, IPSec, J-Flow Accounting,	Stateful Firewall, IPSec, J-Flow Accounting,	Stateful Firewall, IPSec, J-Flow Accounting, PCR Pouts Poffeeter

CARRIER-CLASS PERFORMANCE & SECURITY, READY FOR YOU.

Tired of old answers? Take a look at the future: www.juniper.net/products/jseries/ www.juniper.net

inipernet

**888-JUNIPER** (888-586-4737)



#### **TOLLY ON** TECHNOLOGY

Charlie Bruno

eople do stupid things. At least that's

what VoIP services provider Vonage

would have us believe in its TV ads.

I signed up online for Vonage service

recently to lower the total cost of owner-

ship of my remote office. Now I'm wonder-

ing if I might wind up as the star in one of

Save lots of money on your phone ser-

vice. That's the promise at the heart of Vonage.com. The pitch is intoxicating. Un-

limited phone service for \$24.99 monthly.

For a small business or remote corporate

user shelling out upwards of almost \$150

monthly to a local carrier for two lines, the

\$35 you pay Vonage for a primary line plus

The last week of April I took the Vonage

Well, it actually started about five days

after I logged my online order and Vonage

got around to shipping me my Linksys

router. Setup wasn't bad; I was up and dial-

I started making my VoIP calls, and I was

impressed. The voice quality was very

good; perhaps as good or better than

BellSouth's. But the strangest thing hap-

pened. People calling me weren't getting

through; they kept getting my voice mail —

ing within an hour of unpacking the box.

a fax line sounds like a no-brainer.

plunge. That's when all the fun started.

those Vonage commercials.

## Stuck in VoIP limbo with Vonage

on-net calls only. But callers on carrier netported to Vonage. It didn't mention any vir-

So I did the unthinkable. I called customer assistance. Or, I tried to call. I got lost in a labyrinth of call distributor hell, gave up once and eventually called back. (If all VolP service providers fail as miserably at customer service, VolP is doomed.) Finally, I got through to "Wayne."

Suddenly, the "save lots of money on your

my BellSouth voice mail. Oh, on-net Vonage callers got me alright. I'm guessing because Vonage maps my BellSouth phone number to a temporary virtual phone number for works couldn't get me unless they called my virtual phone number. I didn't even know I had a virtual number. The order page that came with my router only mentioned my BellSouth number that is being

tual Vonage number.

He told me what I feared: Calls to my normal business phone number were still routed to the jack in my wall, not to my new Linksys broadband router. His solution?"Put another phone into the wall outlet and answer calls on one phone and make calls on the Vonage line." Ah, thanks, Wayne.

phone service" promise evaporated from my head faster than you can say G.711.1 realized we're now paying for Vonage service on top of the exorbitant BellSouth phone bill. When I rang Vonage back and talked to "Mark" to make sure I'd heard

Wayne right, he told me I might not have my BellSouth number ported for a month.

So now I'm stuck in VoIP limbo, and I feel like I've done something incredibly stupid. The call quality is pretty good, but I hear occasional dropouts, and today on a conference call I hosted, midway into the call a bandwidth hiccup resulted in the loss of my Citrix session, my instant messaging session and half of my VoIP call. Yup, half. I could hear other parties speaking but they couldn't hear me. The router was decoding but not encoding voice traffic. Swell.

My advice? If you're thinking about VolP services for remote offices, take a long, hard test drive and gather as much hands-on data as you can before you make the leap.

Bruno is executive editor at The Tolly Group. He can be reached at cbruno@

#### Peterson

continued from page 19

#### As Avaya has moved deeper into software and applications, Microsoft has become more interested in voice technology. Does this worry you?

That's absolutely on our radar screen. Microsoft's Live Communication Server does call control, so in that sense it's a direct competitor. But call control long ceased to be the only offer in a PBX. There are 800 features that were created at different times for different customers that we support. Microsoft will be awhile catching up with that. Having said that, there are a number of users, particularly at the small end, where the LCS [Live Communication Server] could catch on. Certainly in the beginning, it's cheap dial tone. Microsoft has a huge network of developers that you would expect to be writing against that. It's going to be a rapidly developing area. But telephony is a non-trivial exercise. So I don't think I'm worried about large companies turning to LCS in a wholesale way in the near term.

#### Is the integration of voice over Wi-Fi and cell phone technology going to happen

Keep in mind the cellular network is a TDM network. There's certainly some [technologies] that we're working on. We've announced partnerships with Proxim and Motorola, where a dualmode handset hooks up to a hot spot. Our recent Nokia announcement goes the other way; it leaves the phone on the cellular network, but it extends the PBX call control out to treat the cellular phone as an extension to the PBX. This retains applications that are on the PBX, like call recording and those kinds of things. There will be other evolutions like that. Right now they're not dependent on an IP transport out to the phone. But that kind of thing would enable streaming video, videoconference calls on the phone more readily than the TDM does today.

#### With so much focus on software and IP telephony, what is the state of TDM technology support and product development?

We treat TDM as an investment to be leveraged. We want to add value to the pure IP world, but we recognize that's not an environment that most of our customers will be going to for a long, long time. If we create a solution that is deliverable in the IP world, we immediately think of how it can be delivered as much as possible by a TDM user on an IP extended link. Our customers can then get a lot of value without having to go through an expensive rip and replacement. They can do that when they're ready, when it makes sense.

There is a lot of interest as to what one particular Avaya customer — Merrill Lynch - is doing with VoIP: deploying a mix of Avaya IP and TDM technology in large corporate offices, and using Cisco VoIP equipment in branch offices. Is this the state that other large customers are in, regarding VolP and telephony - using multi-vendor IP and TDM technology in separate areas? Most companies are looking for a more uniform solution than the one Merrill Lynch has opted for As applications extend outward, that uniformity will become somewhat more valuable. If you make a decision on a cost optimization side, you could end up with different solutions in different environments. The example you cite includes two extremely different environments --- large central locations vs. branch offices with handfuls of people. Overall, Cisco's approach to VoIP isn't as constructive, I think, as ours. They are on one end of the spectrum, doing very proprietary implementations of quote/unquote, open standards. l would characterize us as on the other end; we're trying to be open so these things can work together. In the long run we'll see what's a better strategy.

#### Convergence Subscribe to our free newsletter. DocFinder: 1003 www.networkworld.com

#### Site: Lessons from Leading Users

#### Telemedicine

continued from page 19

American Heart Association, the first three hours are critical if a patient is going to survive and have a chance at a normal life. Bernstein says 80% of strokes are called ischemic. These types of strokes can be treated with tPA, a drug that breaks up clots, which gives patients a 30% better chance of having little after-effects three months later. With the telemedicine system, the consulting neurologist can help the ER physician administer the drug, which ups the odds of recovery.

In addition to providing videoconferencing technology, one of BST's founders developed a Stroke Code Box that sits on each Intern II used for stroke patient care. The box, like a "crash cart" used for heart attack victims, is stocked with the medications needed to quickly treat a stoke patient.

BST is working with Videre Conferencing of Quincy, Mass., to implement the system at UMass Medical and its affiliates, which have not been publicly identified but are scheduled to come online in early June. Videre helped pick out the endpoints being used, as well as set up the dedicated lines between each of the locations. It also provides 24-hour monitoring and diagnostics of the system for BST.

Each site is connected by dedicated T-1 lines, with conferences running at 768K bit/sec over a private IP network provided by Global Crossing, says Steve Cogliano, co-founder and CTO of Videre. One of the remote sites might have to be connected with DSL, meaning the conference's data rate will be lowered to 512K bit/sec. Videre also helps demarcate the hospital data networks to accommodate the videoconferencing.

Tandberg was selected over competitors for its firmware codec, which cuts down on the software problems in the system, Bernstein says. Also, the Intern Il is designed for the medical community and comes with wireless network access. WPA encryption is used to protect the signal inside the hospital.

BST is helping to staff the center at UMass and any future locations with doctors, and plans to build a back-up center at its Wellesley headquarters to provide assistance. Hospitals that participate have to pay an initial installation fee and are charged each time they use the system, Bernstein says. BST is hoping to sell this to other affiliations in the future.

HOW DID ONE COMPANY REDUCE ITS TCO? THEY SWITCHED FROM LINUX TO WINDOWS.



"When we calculated the total cost of ownership for Red Hat Linux using a 10-year Net Present Value Model, we were surprised at how much higher it was than for Windows"."

— J.E. Henry, CIO, Regal Entertainment Group

Regal Entertainment Group, the largest movie theater operator in the U.S., ran its POS concession and ticket terminals on Red Hat Linux. However, they saw that it lacked the vendor support and remote management tools they needed to support their strategic plans. After an in-depth comparison, Regal found that Windows Embedded would deliver a lower TCO, improved security, and fewer risks. "With Windows, we get an integrated, easily managed platform that can extend from the data center to our POS devices," says Cliff DeYoung, CTO at Regal.

To get the full case study, other case studies, or third-party findings, go to microsoft.com/getthefacts



# Web filtering tools handling ever-larger jobs

**BY ELLEN MESSMER** 

rom the time the World Wide Web took off in the mid-90s, corporations began looking for ways to filter out access to its more lurid displays, but IT managers who use filters today say they're good for much more than blocking access to porn.

Because keeping company resources safe from spyware, adware and phishing is of growing importance, Web filter technologies are keeping up by blocking sites known to be engaged in those types of threats. Filters have expanded to block peer-to-peer file sharing sites, which pose copyright concerns and often spread adware. Companies using Web filters expect them to play an everlarger role in enterprise protection.

"Some sites are offensive to employees, such as pornography or gambling, others are time-wasters, such as sports," says Jeff Smestuen, network manager at ice-cream maker Blue Bell Creameries in Brenham, Texas, which has 750 employees at its manufacturing facilities and branch offices."And Internet radio and TV sites are bandwidth hogs."

But these days, Web sites also might be just plain dangerous, pushing key-loggers out to steal personal information or trying to trick people into entering sensitive data.

"The phishing fraud we've seen firsthand," Smestuen says."The Web sites are so professional looking and sometimes employees panic and ask IT for help."

Blue Bell uses Websense Enterprise as its filtering gateway to the Internet. Over the past year, Websense added a way to automatically block phishing and other fraudconnected Web sites as soon as they were identified.

"It does a pretty good job of blocking these sites," Smestuen says. "Nothing is going to get it all, but this

Web filters also are expected to be flexible so that network managers can cut employees some slack even while stopping them from whiling away the day on the Web. Blue Bell, for instance, can set a "limit by quota" on the number of times an employee is allowed to go to some sites, such as those for weather or news.

"It can get to be a morale issue if you crank it down too much," Smestuen says about using a Web filter to police an employee's Web use.

#### The Web-filtering market

According to research firm Frost & Sullivan, industry veteran Websense still holds almost half of the Web-filtering market along with rival SurfControl (see graphic).

But since the early days of the Web, competition has grown, with Secure Computing, Symantec and McAfee also scoring gains in a growing field of contenders.

This month Websense pointed out how times have changed by detailing the sharp increase of entries in its master database of monitored sites.

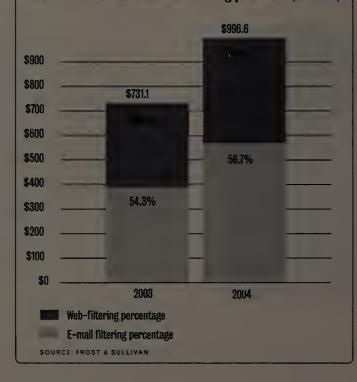
When it first started in 1996, its filtering database consisted of 26 categories with roughly 25,000 Web sites. Today, the Websense Master Database stands at 10 million Web sites and more than 90 categories as it tracks shopping, gambling, games, entertainment and MP3 sites. Several other Web-filtering vendors, including Lightspeed Systems, also claim to be well past the 10 million mark.

During the first quarter alone, Websense says it categorized more than 13,000 Web sites engaged in spyware,

Choose your filter

According to research firm Frost & Sullivan, Websense and SurfControl held the largest market share in Web filtering, sharing about 44% of the market.

**World market for content-filtering products** (in milions)



phishing and other frauds in order to reduce customer's exposure. According to Websense, spyware-related sites have grown from 37,800 sites to more than 89,000 over the last year.

Tom Trumble, network administrator for Merrimac County in Concord, N.H., says spyware has become a major threat to desktop security and privacy. "We've seen a serious increase in spyware drive-by installs," says Trumble, describing how unwanted code is dropped from the Web site onto the Web surfer's machines without his

Merrimac County recently acquired the Blue Coat appliance Interceptor, which combines URL filtering with blocking spyware downloads. Because monitoring and blocking access to Web sites is a sensitive subject that affects an entire organization, Trumble says he's presenting his Web policy ideas before the board of commissioners to get the government equivalent of management buy-in before monitoring or blocking access for agency

"We'd rather hear the objections in advance rather than later,"Trumble notes."We don't want to be seen as Big

When governments anywhere in the world set policies for Web filtering on a national scale, it naturally draws attention from free-speech advocates concerned it might involve political or religious suppression.

A research group called the OpenNet Initiative, a partnership between the University of Toronto, Harvard Law School and Cambridge University, has issued several reports over the past few years detailing how China, Iran and Saudi Arabia, among others, make use of Web filtering to achieve political ends.

A study published last month, titled "Internet filtering in China in 2004-2005: A Country Study," says the Chinese government's ability to block access to political, religious and news information makes it "the most sophisticated effort of its kind in the world."

#### Acceptable use, American-style

When filtering access to the Web, corporations, government agencies and schools in the U.S. often require network users to agree to Internet acceptable-use policies by signing a form stipulating off-limits activities.

According to the U.S. Department of Education, 83% of public schools have students sign such contracts now.

But that doesn't mean Web monitoring is easy for school IT administrators who manage the high-speed networks that are increasingly common in U.S. public schools. Some schools don't just have forbidden Web sites — they have a list of forbidden search words and if a Web filter catches one being used, IT administrators are compelled to bring that to the attention of school management.

This happens from time to time at Bullard Independent School District in Texas, which uses Lightspeed Systems' Trusted Traffic Control appliance to monitor Web access from its high-speed LAN to the Internet.

"High schools have procedures for all this," says Lee Sleeper, Bullard's technology manager. Discipline for student misbehavior might involve the school's deciding to temporarily revoke the student's network privileges

There's the prevailing notion in some quarters that America, the land that gave rise to adult-porn Web sites, also is the country spending the most time and money in making sure employees and students aren't able to get to

According to Jose Lopez, senior industry analyst in network security for Frost & Sullivan, which is based in London, says two-thirds of Web-filtering product sales are made in the U.S.

In Europe, the U.K. and Germany are the only significant markets, Lopez notes, adding the Scandinavian countries seem to have little interest in blocking porn.

Danny McCampbell, senior network analyst at Mahle, the Morristown, Tenn., subsidiary of German-based automotive part manufacturer Mahle GmbH, says it's easy to get the impression that Europe has a different attitude about risqué material.

Mahle uses SurfControl's Web Filter to block sites the filter deemed to be "adult content." But Mahle found employees sometimes couldn't get access to European business sites, such as travel sites to make reservations, because these sites had risqué photos posted on them.

"The user would call and say,'I'm trying to get on this site but I can't," McCampbell says. "So we created an exception rule for the filter that allows access but bloc the risqué advertising."

In Web filtering, exceptions can be the rule.

Although Mahle doesn't generally permit access to gaming and entertainment sites, the company makes an exception for the Nascar racetrack's Web site at

"We're an automotive manufacturer and we allow it because we manufacture pistons for Nascar," McCampbell says. ■

# Control THE FUTURE OF YOUR Security

WITH PREEMPTIVE PROTECTION.



Proventia ESP (Enterprise Security Platform) from ISS stops Internet threats before they impact your network. With intrusion prevention and vulnerability assessment products and services, Proventia ESP gives you centralized control and enables network uptime. Only ISS keeps you ahead of the threat with preemptive protection to reduce your overall risk. Download a free white paper at www.iss.net/ESP/network, or call 1-800-776-2362.

INTERNET SECURITY SYSTEMS\*

Ahead of the threat.™



With lightning speed and brilliant color, no wonder the Xerox Phaser® 8400 printer is getting rave reviews. And starting at just \$999, it's cause for celebration. Xerox Color. It makes business sense.

What does \$999 buy you? Quite a bit, when you're talking about the Phaser 8400. It prints vivid color plus black and white at the same incredible speed—24 pages per minute. So it's no surprise that it's winning all kinds of industry recognition. Like PC World's Best Buy Award for Color Laser Printers, as



well as Buyer's Laboratory's Pick of the Year for Outstanding Critical Color Printer. Not to mention Better Buys for Business's 2004 Hot Pick Award. To learn more about our full line of Xerox network printers, digital copiers and multifunction systems, call or visit our website today. Champagne, anyone?







xerox.com/office/winning8400 1-877-362-6567 ext. 1977

Technology

Document Management | Consulting Services

# Computing

# ■ WINDOWS ■ LINUX ■ UNIX ■ SERVERS ■ STORAGE ■ GRID/UTILITY ■ MOBILE COMPUTING

# New appliances put squeeze on data

Data Domain says its data compression appliances and software are cost-effective alternatives to tape.

#### **■ BY DENI CONNOR**

Privately held Data Domain last week rolled out high-end versions of its back-up and recovery system — offerings that exploit compression technology to make backing up data on disk cost competitive as compared with tape, the company says.

By filtering redundant components, the new DD400 appliances and accompanying software can be used to compress data

## Takes

- Fujitsu last week began shipping a faster version of its Sparc64 V processor with five models of its Prime-Power Unix servers. The servers feature a 2.08-GHz Sparc64 V CPU with 4M bytes of on-chip cache. This is a bump from the last version, which had a clock speed of 1.89 GHz and 3M bytes of cache. Pricing for the systems with the new processors will increase. Prices will range from \$42,780 for the PrimePower 650 to \$553,000 for the PrimePower 2500.
- PalmOne last week took the term "interim" out of Ed Colligan's job title, making him the company's new CEO and president. The move preceded PalmOne's launch of the first in its new mobile manager range of handheld computing products. Colligan joined Palm Computing in 1993 as vice president of marketing, later co-founding Handspring, where he served as president and COO (PalmOne bought Handspring in 2003).
- HP is shipping BladeSystem packages for small and midsize business featuring a 1U power supply. The power enclosure, with up to six hotplug power supplies, starts at \$1,199. Customers also can buy the enclosure (with two power supplies) as part of a package that includes one HP ProLiant server blade, an HP BladeSystem enclosure and management software starting at about \$3,000.

by a factor of 20, the company says.

Because the company's compression algorithm is data-format independent, the back-up images its products create can contain both structured database data and unstructured text files. Typical back-up software such as EMC/Legato NetBackup writes data to the DD400 in an unchanged fashion. As data is stored longer on the appliance, the compression factor will increase because of the amount of redundant data already culled out, Data Domain says.

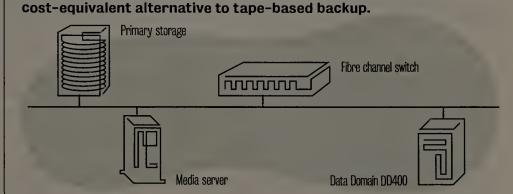
The offerings, which succeed the 4-year-old company's smaller capacity DD200 appliances, come in three models, ranging in capacity from 15T to 83T bytes. Each model — the DD410, DD430 and DD460 — also has different throughput characteristics. The DD410, for instance, can back up data at 160G byte/hour, compared with the high-end DD460, which can perform at almost twice that — 290G byte/hour.

Ephraim Baron, senior director for IS&T server operations at EFI in Foster City, Calif., uses the DD200 and plans to add a DD400 to back up as much as 70T bytes of engineering data.

"We were facing increasing costs of tape backups and the lengthening of the back-

#### **Backup plan**

Data Domain's new DD400 series appliances squeeze data and back it up on disk, providing what the company claims is a faster and roughly cost-equivalent alternative to tape-based backup.



up window," he says. "The staff I have is pretty senior and I don't want them spending time swapping tapes and getting data packaged to go off-site. Every time I sent management a purchase requisition of \$40,000 worth of tape, they cringed."

With the Data Domain appliance, Baron now can keep data on-site longer.

"We are now keeping three to four months of data online that before would have gone off-site each month," he says. "We're essentially backing up the same data, but we aren't doing it all the time."

The DD400 boxes work with IBM/Tivoli Storage Manager, HP OpenView Data Protector and BakBone Software's NetVault, as well as with Veritas NetBackup and Backup Exec, EMC/Legato Networker and CommVault Galaxy.

The DD400 appliances start at \$19,000.

Data Domain has collected \$26.3 million in venture funding, and is backed by Greylock, New Enterprise Associates and Sutter Hill Ventures.

# IBM, Red Hat target Solaris with Linux

#### BY ROBERT MCMILLAN

IBM and Red Hat last week announced a range of initiatives designed to woo users of Sun's Solaris operating system over to Red Hat Linux.

IBM's System and Technology group will begin offering free migration assessments to Solaris customers who want to know more about the costs and benefits of moving from Solaris to Red Hat Linux. Over the past year, IBM's AIX group has sponsored about 500 such assessments for Solaris and HP-UX users, and the company now hopes to complete up to twice as many by yearend, according to Scott Handy, vice president of worldwide Linux at IBM.

Big Blue sells Red Hat Linux and Novell's SuSE Linux on a variety of its hardware, including its xSeries, pSeries and zSeries servers, but these new initiatives were designed in partnership with Red Hat,

Handy says. Red Hat Linux also is offered on servers from other hardware vendors.

The migration assessments will be conducted by a team of 150 engineers that IBM acquired in 2003 when it purchased the application-porting services division of Sector7 USA, Handy says. The assessments will be generally available to customers starting June 1.

IBM also has been working with 22 financial services software vendors, including Cameron Systems and TimesTen, to help them port their Solaris products over to Linux. These vendors have moved 33 of an anticipated 48 total applications over to Linux, Handy says.

A third component of the program will be IBM's sponsorship of seminars and educational events designed to help customers with their Linux migration questions, Handy says.

Sun has attacked Red Hat's Linux distrib-

ution, calling it an incompatible variation, or "fork," of Linux, and Sun has promoted Solaris on Advanced Micro Devices' Opteron as a technically superior alternative to Red Hat Linux.

IBM hopes the new programs will help counter some of Sun's rhetoric, Handy says. "We decided it was really important that we partner with Red Hat in addressing this challenge."

But the more important reason has to do with timing, Handy says. With much of the Sun equipment bought during boom years now depreciated, IBM sees a chance to sell its own hardware into these accounts, he says. "Those servers are now four and a half years old, so the real bulk of the Solaris-to-Linux migration is a wave that's occurring now," Handy says.

McMillan is a correspondent with the IDG News Service.

# Finisar's NetWisdom

#### Ensures SANs Deliver On Application Performance

CIOs know that good application performance is critical to employee productivity, customer satisfaction, and even business opportunities. That's one reason more and more enterprises are deploying storage area networks — SANs are a highly reliable, high-performance alternative to directly attached storage, helping to boost overall application throughput and uptime.

However, SANs are both a blessing and a curse. On the plus side, SAN components are highly interoperable, allowing SAN managers to combine switches, host bus adapters (HBAs) and other components from a variety of vendors. On the minus side, SAN vendors only provide performance information for their component, which makes it difficult to get a handle on end-to-end SAN performance, error levels, and capacities. Consequently, if an application's performance degrades, SAN managers often cannot determine what role — if any — the SAN played.

What SAN managers need is a management tool that allows them to view the SAN holistically and track application performance across the entire fabric. Finisar's NetWisdom provides this capability. Through its comprehensive monitoring and reporting features, NetWisdom gives SAN rnanagers real-time information ranging from overviews to detailed performance, error, and capacity-related metrics for all SAN transactions.

Using hardware and software probes, NetWisdom monitors data in real time as well as provides trend analysis of historical data. Through its alarm notification and alerts feature, SAN managers are made aware of device degradation symptoms, bottlenecks, and errors, enabling them to address problems before they impact application performance or availability. In addition, SAN managers can baseline SAN performance with NetWisdom, allowing them to establish realistic service level agreements (SLAs) and ensure SLA compliance.



NetWisdom's dashboard displays the overall health of the SAN at a glance.

Performance Management

Applications vary in their performance sensitivities, making it a challenge to ensure each application gets the response time and throughput levels it needs from the SAN. By providing link and port performance statistics as well as transaction details, NetWisdom helps SAN managers deliver the performance a given application requires. For example, for each server HBA-storage port target-LUN combination, NetWisdom can provide information such as read and write throughput in MB/sec; issued vs. completed reads and writes; and average, minimum, and maximum Exchange Completion Time (ECT).

ECT measures the time from when a host requests data to when it receives that data, and is a good way to track SAN response time. Using NetWisdom to establish the baseline ECT for each application and each disk array, a SAN manager can ensure that a given disk array is capable of supporting a given application. For example, an older array with an ECT of 1200 msec would be a poor choice to house data for an application that requires an ECT of 200 msec.

Likewise, NetWisdom can monitor data transfer and I/O rates on a per-transaction basis and alert SAN managers if performance falls below acceptable levels. For example, an editing group working with a high definition video processing application utilizing a specific set of LUNs used NetWisdom to ensure the SAN delivered 1 TB of data per hour (277 MB/sec) and had I/O times of 30 milliseconds or less.

Uptime and Capacity Management

To their credit, SANs rarely fail completely. More often, individual component failures or rising traffic levels trigger overload conditions that can result in an application being starved of SAN resources. Depending on the application, such resource deprivation could result in a dip in performance or an outright failure requiring human intervention. For example, if a critical Microsoft SQL application and an email application share the same storage array, a series of emails with large attachments could hog all available SAN bandwidth, leaving none for SQL users. In another scenario, one HBA in a pair could fail, forcing all traffic onto the remaining HBA, creating an overload condition.

With NetWisdom, SAN managers can track the volume of traffic on links and ports, and be alerted if, for example, the traffic on a switch link exceeds 60 percent utilization. By tracking traffic patterns and usage, SAN managers can easily see when links and switches are approaching overload conditions, letting them accurately plan where and when to add capacity to the network, avoiding unnecessary upgrades and preventing degradation of application performance.

Similarly, NetWisdom can alert SAN managers if there is a spike in errors. A pattern of errors, such as aborts, link resets, or fabric log-outs and log-ins, can signal problems with particular SAN components. By tracking and trending such errors, SAN managers can pro-actively schedule maintenance and replace or reconfigure a component, preventing a failure from impacting users.

SANs are a crucial link in the application performance chain. With the right tool, SAN managers can accurately monitor bandwidth utilization and project for additional capacity, identify and isolate errors, and address performance bottlenecks before they impact application performance or availability. With NetWisdom, SAN managers can ensure that the SAN is delivering the application performance that users need.

For more information on NetWisdom and SAN Performance Management sign up for our FREE webinar by going to http://finisarevents.webex.com or call (408) 400-1110

Sponsored by -

Finisar

# ervices CRM ■ MESSAGING/COLLABORATION ■ WEB SERVICES ERP ■ E-COM ■ NETWORK AND SYSTEMS MANAGEMENT

# **IBM** introduces configuration mgmt. software

#### BY DENISE DUBIE

IBM last week rolled out a series of products aimed at helping customers better track changes to and monitor for problems with business applications.

The company unveiled its Tivoli Change and Configuration Management Database (CCMDB) software, which will let customers collect system and application configuration information across multiple data stores and create a database that will let customers track changes in their infrastructures and determine how those changes affect application performance.

Companies such as BMC Software also have delivered this type of database that would present data from multiple data stores in one consolidated view.

Tivoli CCMDB is installed on a server and See IBM, page 32

■ Xythos Software last week unveiled new versions of its document and file management software suites aimed at improving content security. New to Version 5.0 of

**Xythos Enterprise Document** Management Suite are automated document-classification tools and support for retention schedules, which spare end users from having to manually keep up with corporateretention policies as a document's status changes. Workflow features for routing documents through predefined review and approval processes also are new to Version 5.0. For the education industry, there's Xythos Digital Locker Suite 5.0, which includes features aimed at protecting content that users share on and off campus. For the developer community, WebFile Development Suite 5.0 is designed to help application developers integrate content management functions within current applications and projects.

# **Site:** Lessons from Leading Users

# Utility energizes applications

#### BY ANN BEDNARZ

enterPoint Energy isn't accustomed to being an early adopter of new technologies. But when the Texas Legislature voted to deregulate the state's electric industry, the Houston electric utility faced big changes to its operating model — changes that exponentially increased the integration demands on CenterPoint's IT systems.

Today, CenterPoint does business in the deregulated energy market not as an old-school utility company with monolithic systems, but as a nimble energy-delivery company with a composite application framework that gives company management customized diagnostic dashboards for keeping tabs on everything from individual transactions to overall business performance.

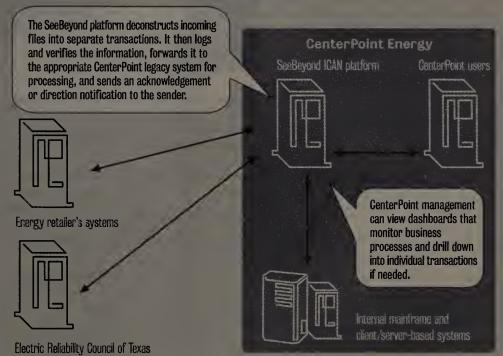
Before deregulation took effect in 2002, CenterPoint's electric utility business did it all — it generated power, sold and delivered power to customers, and collected payments. With deregulation, its focus shifted to electricity transmission and distribution, while competing providers sell the electricity to consumers.

"The law said that the regulated utility company could no longer sell electricity. Our only function would be the transmission and distribution of electricity," says Mary Rich, IT manager of the \$17 billion company, which today provides electric and natural gas delivery. That distinction triggered massive integration challenges because CenterPoint now has to coordinate with dozens of market participants such as other electric companies, as well as the Electric Reliability Council of Texas (ERCOT), which administers the state's power grid.

"When we did it all in-house, a customer would call the electric company and tell us they needed their electricity turned on Customer service would ask several questions and enter the data into a single system. That same mainframe system that set you up would produce

#### **Doing business post-deregulation**

CenterPoint Energy built a business-to-business integration hub for swapping orders with its commercial partners. Built in business activity monitoring features let internal users keep tabs on key performance metrics.



your bills, track and handle service requests, and even provide a feed to the outage system," Rich says. Things aren't nearly so simple anymore. "Now that same transaction could go through 50 system processes in four separate companies before the order is actually completed. It's now very complex," Rich says.

CenterPoint initially selected software from SeeBeyond to create an integration hub between its current legacy systems, the retailers' systems and ERCOT. The SeeBeyond technology handles the necessary data translation, validation, transfer and reporting."The project was to get into the deregulated market and get the transactions in and out the door," Rich recalls.

The success of that project led to a bigger role for the SeeBeyond software, which today is the company's technology standard for integration projects.

In January of this year, CenterPoint rolled out Version 5.0 of SeeBeyond's Integrated Composite Application Network (ICAN) suite. The suite consists of

multiple products, including eGate Integrator, which tackles application connectivity and data transformation; eBAM Studio, which generates business activity monitoring (BAM) applications for tracking key metrics; and eVision Studio for creating composite Web applications. This year the company is looking at implementing elnsight Business Process Manager, which handles the orchestration of multi-system business processes.

With Version 5.0, CenterPoint is taking steps to migrate to a service-oriented architecture that will support a system of composite applications created from current legacy applications. The goal is to shift away from traditional monolithic application development methods and toward a more flexible, process-based model.

With real-time analytics and performance management capabilities, the system lets end users see what's going on and monitor transactions from start to finish via a Web interface. For example,

See CenterPoint, page 32

# PAY MORE ATTENTION TO SERVERS BEFORE YOU BUY THEM. SO YOU CAN PAY LESS ATTENTION

Affordable, reliable, easy to manage: eServer® xSeries® with Intel® Xeon™ Processors



IBM eServer xSeries 236 Express

Designed to improve performance and availability, with a range of features such as redundant hot-swap power and cooling.

#### System features

eServer® xSeries

Up to two Intel Xeon Processors 3.60GHz

Two-way tower with rack capability

Up to 9 hot-swappable SCSI hard disk drives

**IBM Director** 

Limited warranty: up to 3 years on-site3

From \$2,989\*

**IBM Financing Advantage** Only \$82 per month



#### IBM eServer xSeries 346 Express

Help maximize performance and improve availability in a rack dense environment with Xtended Design Architecture.™ Includes features like Calibrated Vectored Cooling, an IBM innovation that helps to keep your system cool and improve

#### System features

Up to two Intel Xeon Processors 3.60GHz

Two-way 2U rack server Up to 16GB DDR2 memory using 8 DIMM slots

Calibrated Vectored Cooling IBM Director

Limited warranty: up to 3 years on-site3

From \$3,999\*

**IBM Financing Advantage** Only \$109 per month



#### IBM eServer xSeries 366 Express

With the power of 3rd generation Enterprise X-Architecture,™ it sets a new standard for 4-socket, 64-bit servers. Delivers increased performance, systems manageability, and simultaneous support for 32 and 64-bit apps.

#### System features

Up to four 64-bit Intel Xeon Processors MP 3.66GHz 64GB DDR memory

2GB memory expandable to 64GB

Six 64-bit Active PCI-X 2.0 IBM Director

Calibrated Vectored Cooling Limited warranty: up to 3 years on-site3

From \$13,779\*

**IBM Financing Advantage** Only \$379 per month'

Flexible and easy to use

BladeCente

eServer



IBM eServer BladeCenter H\$20 Express

Designed to support the Intel Xeon Processor and packed with high-availability features, the eServer BladeCenter HS20 with industry-leading modular design delivers density without sacrificing processor performance.

#### System features

Up to two Intel Xeon Processors 3.60GHz

Up to 14 blades per chassis Supports both 32 and 64-bit applications

**IBM Director** 

Limited warranty: up to 3 years on-site

From \$2,589\*

**IBM Financing Advantage** Only \$71 per month

#### IBM TotalStorage®

Simplify storage management to improve productivity



#### **IBM TotalStorage DS300 Express**

Entry-level, cost-effective SCSI storage systems designed to deliver advanced functionality at a breakthrough price. Provides an exceptional solution for work group storage applications, such Starts at 584GB / Scales to 4.2TB as e-mail, file, print, database and Intel Xeon

#### System features

3U rack-mount entry level Support for up to 14 Ultra320 SCSI disk drives

From \$5,355

Simultaneous support of heterogeneous operating system environments for xSeries and BladeCenter

Limited warranty: 1 year

IBM Financing Advantage Only \$147 per month

\*All prices stated are IBM's estimated retail selling prices as of May 3, 2005. Prices may vary according to configuration. Resellers set their own prices, so reseller prices to end users may vary. Products are subject to availability. This document was developed for offerings in the United States. IBM may not offer the products, features, or services discussed in this document in other countries. IBM Director is not available on TotalStorage systems. IBM Director must be installed. Telephone support may be subject to additional charges. For on-site labor IBM will attempt to diagnose and resolve the problem remotely before sending a technician. IBM Global Financing terms and conditions and other restrictions may apply. Monthly payment provided



# TO THEM AFTER.

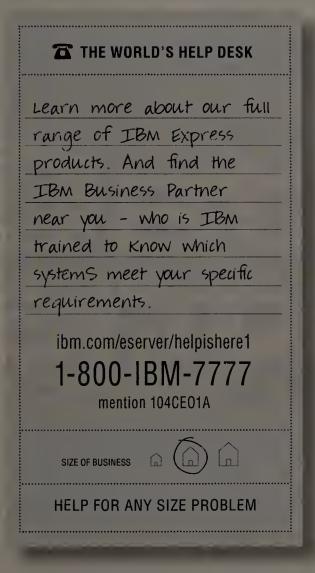
With IBM® Express Servers and Storage™ designed for mid-sized businesses, help is here.

You've already got a zillion things that require your attention—you shouldn't have to worry about your systems. That's why IBM Express products offer enhanced reliability, which helps them do their job so you can focus on yours.

Take IBM Director, for example. It proactively notifies you of a potential problem – up to 48 hours in advance. Or our Calibrated Vectored Cooling feature available on select xSeries systems. It cools your system more efficiently. This means more features can be packed into a smaller server. Giving you more functionality and greater flexibility.

It's just an example of our self-managing features that help you take back control of your IT. Which can help lower your maintenance costs, too. Because with IBM Express Servers and Storage, innovation comes standard. It's not optional. Plain and simple, it's built in.<sup>2</sup>

There's also one more great feature—your IBM Business Partner. Which means you can have a one-to-one chat with someone who understands your industry and your business—and who's located in your neck of the woods. And for mid-sized businesses, that's really big help in a really big way.





#### IBM TotalStorage DS400 Express

With advanced functionality, the DS400 provides an exceptional solution for work group storage applications. It supports Intel Xeon Processor-based servers and offers Fibre Channel drives designed for high performance, and hot-swap Ultra320 SCSI drives designed for high reliability.

#### System features

2GB Fibre Channel storage systems area network (SAN) 3U rack-mount entry level Starts at 584GB / Scales to 5.8TB

From \$8.495\*

Simultaneous support of heterogeneous operating system environments for xSeries and BladeCenter

Limited warranty: 1 year on-site<sup>3</sup>

IBM Financing Advantage
Only \$234 per month

is for planning purposes only and may vary based on customer credit and other factors. Rates and offerings are subject to change, extension, or withdrawal without notice. IBM, eServes, BladeCenter, xSeries, TotalStorage, IBM Express Servers and Storage, Enterprise X-Architecture and Xtended Design Architecture are trademarks or registered trademarks of International Business Machines Corporation in the United States and/or other countries. Intel, Intel Inside, the Intel Inside logo, and Intel Xeon are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries. Other company, product, and service names may be trademarks or service marks of others. © 2005 IBM Corporation. All rights reserved



5/23/05

he powers that be in New York City have concluded that telecom networks are at least as important to the economic vitality of the city as the subways, roads and airports. They also concluded that something needs to be done to improve the current network infrastructure and that the city needs to help.

The powers that be in this case are the New York City Economic Development Corporation, the New York City Department of Information Technology and Telecommunications, and the New York City Department of Small Business Services. With great fanfare, New York Mayor Michael Bloomberg recently announced that these

## A not-all-powerful plan of action

groups have developed a "plan of action" (see www.networkworld.com, DocFinder: 7230).

The plan concludes that parts of the city are in quite good shape telecom networkswise, though most of the city needs help. But this plan includes far less governmental action than what has been proposed or is under development in other places around the country.

The plan also might be less likely to provoke the same kinds of armies of telco lobbyists that are so successful at getting state legislatures to tell local governments that they cannot do what they feel is best for their citizens.

A few months ago I wrote about the actions of one of these state legislatures ("A warning about future telecom 'reform'?" DocFinder: 7232) and about the Utopia project (DocFinder: 7231), an example of the kind of effort the actions have tried to

The New York proposal does not involve all that much direct network building. The proposal is to run fiber to support some nonprofit efforts and to install some redundant fiber to important public and private sites in lower Manhattan. The plan also is to install conduits for carriers to use as they repair streets. The only effort the city groups propose that might be called network construction is a rooftop wireless back-up network to improve the reliability of network service in lower Manhattan.

The city groups propose to use some federal development funds to pay for these and a few other initiatives. They also propose urging that network connections to office buildings be made more reliable.

All in all, this is a quite modest proposal. It relies more on encouraging the private sector to do the right thing than building it themselves. In New York this seems realistic. It's not clear that the same sort of plan would work all that well in a place that does not have a current base of technology-intensive companies as strong as New York's. This is why the trend of state legislatures genuflecting in the direction of local telephone companies is such a problem.

Limiting the ability of municipalities to install their own wireless or fiber infrastructures, if they come to the conclusion that it would be better for their own economic vitality, puts states and municipalities at an economic disadvantage. Maybe the local monopoly telephone company will step up to the task in a reasonable time period and offer service at a reasonable price. Then again, maybe pigs will soon fly.

Disclaimer: I expect that the aerodynamic theoreticians at Harvard would say that pigs can't fly (unless dropped), but I did not ask about that or municipal networks.

Bradner is a consultant for Harvard University's University Information Systems. He can be reached at sob@sobco.com.

#### IBM

continued from page 29

collects information from corporate data stores to populate the database. It discovers the underlying infrastructure, and relationships among applications and the network supporting them. The software also can

communicate directly with point products from Cendura, Collation, nLayers and Relicore, and incorporate data collected by third-party systems such as asset management wares or trouble-ticketing tools.

Once the software is deployed, IT managers set thresholds on which the software would generate events, alerts and reports.

The software includes a modeling tool that lets users establish standard IT service delivery models. It would alert IT managers when parts of a process fail, either on the business side or on the lT side.

For Wayne Fowler, this type of software. would give him a single view of configuration management data stored on mainframes, in various Tivoli, Peregrine and Remedy software applications, and even Excel spreadsheets. The department manager for systems management and business services at Bank of Montreal Financial Group in Toronto says he might start evaluating Tivoli CCMDB in the near future.

"We have pockets of valid and well-maintained information and we wouldn't do away with them, but this product would be federated and use parts of all that information to help us automate how a change on a server relates to a problem with an application and then update the configuration database," he explains. "Right now, it's a bunch of people in a room talking about [how changes impact performance]. Software that could automate parts of that process would drive more efficiency and

Tivoli CCMDB also will be the foundation for new IBM Tivoli Process Managers, prepackaged applications that focus on release, availability and information lifecycle management.

For example, the release-management application would instruct customers on how to prepare to distribute an application release. The software would integrate with products such as IBM Tivoli Provisioning Manager and IBM Tivoli Configuration Manager, and trigger the automatic distribution of packages using the pre-defined process laid out in Tivoli Process Manager. The applications come with sets of best practices but can be customized to a company's specific processes or vertical industry needs.

IBM aligned its best practices with those the Information Technology Infrastructure Library, or ITIL, which provides guidelines for instituting processes around change, availability, problem and configuration management, for example.

To add efficiency and lower costs, Fowler says Bank of Montreal Financial Group also adopted ITIL best practices and says IBM's support has him considering an upgrade to his Tivoli software deployment.

"We've made a heavy investment in ITIL. We wouldn't even be talking with them if they didn't support ITIL," he says.

IBM also upgraded 14 products to integrate and share data with the new management database software. All products are scheduled to be available by the fourth quarter. Pricing will be set then when the products become available, IBM says.

# News Dalerts

Hate hunting for stories on a specific topic? Let the news come to you with Network World's latest news alerts — with focuses on security, financials, standards, trade show news and vendor-specific news.

Sign up today at

Site: Lessons from Leading Users

#### **CenterPoint**

continued from page 29

users in SeeBeyond's revenue, billing and credit departments can see the number of transactions received, compare current levels to historic figures, and see how many transactions have been processed, Rich says.

Users also can go a step further and access individual transactions."They can get down all the way into a transaction and fix it if there's a functional error, or reroute it, or do a lot of other things down at the single-transaction level," Rich says.

By giving end users greater visibility into transactions — as well as control over those transactions — it cuts down on the amount of manual effort required, Rich says. In the past, identifying and resolving individual transaction errors was a time-consuming chore for end

**LE** We process 500,000 transactions a day. Just a 1% error is an unmanageable figure of errors. 77

**Mary Rich** 

IT manager, CenterPoint Energy

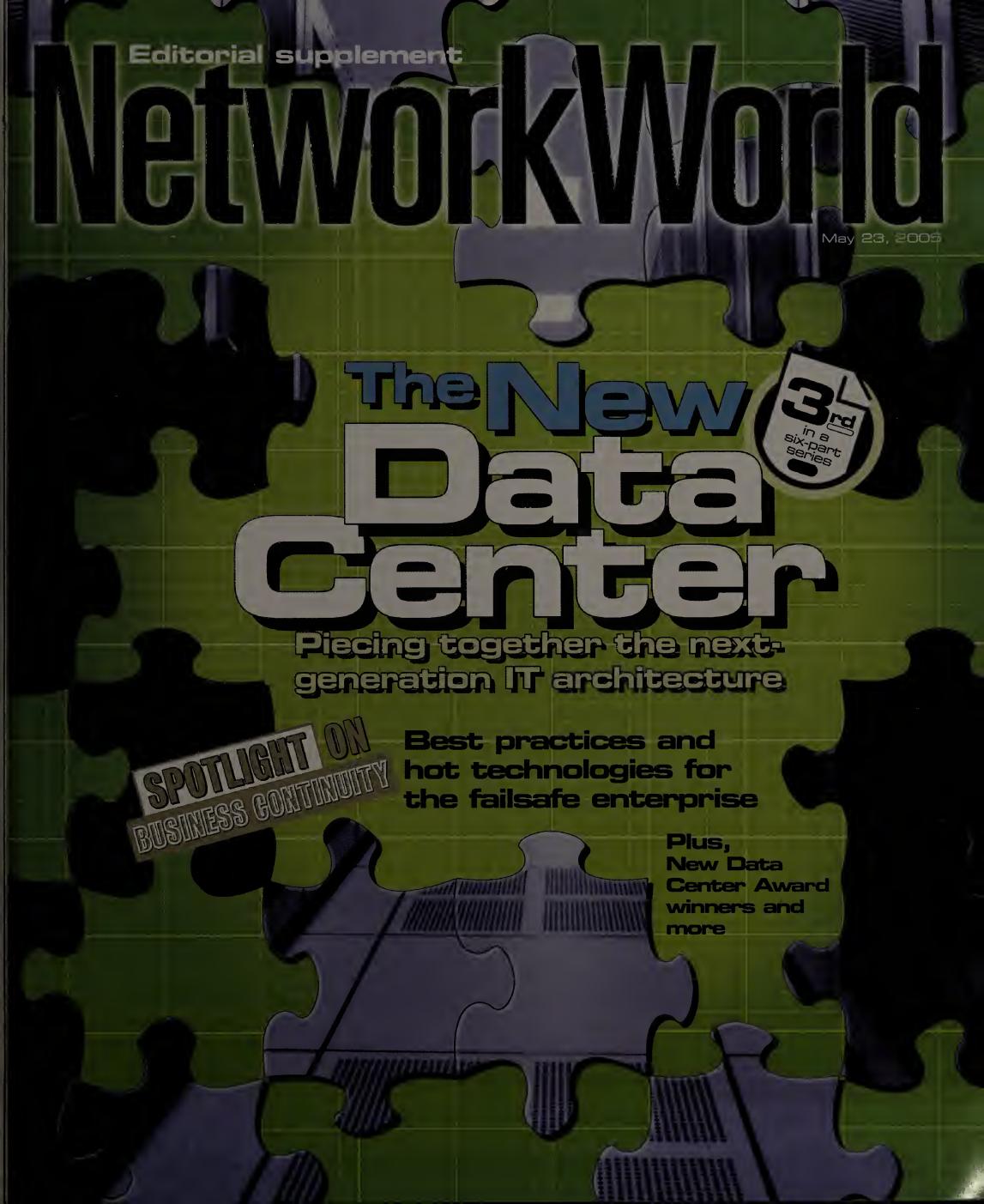
users and IT staff. If a transaction error CenterPoint's databases to extract transaction data and dig through it to find the error's source, and then contact the IT team to make the appropriate change in the database directory.

There was a lot of e-mail back and forth between IT and users, Rich says. With the SeeBeyond technology, end users can

make corrections without requiring IT

Real-time analytic capabilities help CenterPoint spot and resolve transaction problems much more quickly, which makes business users more proactive than reactive, Rich says. That's important with a transaction processing network the size of CenterPoint's. "We process 500,000 transactions a day Just a 1% error is an unmanageable figure of errors," Rich

One advantage of using a common occurred, someone had to query platform for integration and process monitoring is that IT staff have honed their SeeBeyond expertise."When a problem is presented to us, we can figure out how to get it resolved in SeeBeyond,"Rich says."It cuts down on support personnel, it makes operating costs a lot cheaper, and it allows us to utilize the SeeBeyond tools to their fullest extent."





### SMARKEST

#### WE COULD DO TO STOP SPAM.

At World Wildlife Fund, we were overwhelmed with spam and knew we had to act. We tried another managed service but ran into problems and disruptions. Then we switched to Postini. Smart move.

Now we protect email at our Washington DC headquarters and several of our field offices around the world with Postini's patented, secure email boundary services. We're still outsourcing our email security—saving time, money and handwidth—only now we have the best: Postini.

GREGORY SMITH, VICE PRESIDENT AND CIO, INFORMATION TECHNOLOGY WORLD WILDLIFE FUND, WASHINGTON DC

FIND OUT WHY COMPANIES ARE SWITCHING TO POSTINI. DOWNLOAD A FREE WHITE PAPER AT WWW.POSTINI.COM/NW, OR CALL US TODAY AT 888.584.3150



PREEMPTIVE EMAIL PROTECTION

SWITCH TO POSTINI. THE SMART MOVE.

# The New 3 Parties of the New 3

Piecing together the nextgeneration IT architecture

#### DOWNTIME NO MORE

Server clustering and virtualization give users a better road to dependability.

REMEMBERING EVER INSTANT IN TIME Continuous data protection takes apps back to any point in time for unbeatable recovery.

#### MPLS DONE PIGHT

Early dopters share tips on making MPLS truly fail-safe.

#### IT MONITORING

WITH A TWIST Business activity monitoring tools strive to turn threatening events into nonissues.

#### VOUR OPINION:

TALK UP Disaster-recovery tactics get the floor in this ongoing roundtable series among IT execs.

Beyond business continuity, this special supplement examines other new data center trends:

#### CENTER BY THE NUMBERS

From autonomic computing to virtualization, new data center technologies rate high with readers.

#### AWESOME IN

AUSTI V Oracle's Austin facility wins a New Data Center Award for grid use and more.

#### THE LAST PIECE: FILLING THE APP GAP Tech entre-

preneur Bill Coleman discusses the promise of a tomated application management.

A look ahead to the other pieces of the 2005 New Data Center series:



# The SWAY Susiness continuity

Savvy strategies for the emerging new data center.



DAN PAGE

■ BY JOANNE CUMMINGS



one are the days when a comprehensive business-continuity plan meant mailing back-up tapes to a hot site a few miles away. Today, businesses are always on, running at break-neck speed 24/7. And their business-continuity plans need to reflect that reality.

"If we're not getting data from our customers, we can't run our business," says Jeff Flanigan, director of IT infrastructure at E-gatematrix, an Atlanta company that tracks and stocks meals, headsets, blankets and other service items for major airlines around the world. "There are airplanes in the sky 24/7, and we're always either loading aircraft or getting ready for aircraft to come in. It's a nonstop process. We can't be down, and our disaster-recovery plans have to take that into account." Fortunately, new data center technologies, such as business process monitoring, continuous data protection and virtualization, are emerging to make recovering such environments easier and more cost-effective. Experts and users who have built successful business-continuity plans offer the following best practices for business continuity in the era of the new data center.

1. Tier applications by criticality. Today's organizations are becoming increasingly data-intensive and, as a result, the amount of data they potentially need to recover quickly can become overwhelming. "Up until now, many companies aimed to recover absolutely everything in one fell swoop," says Michael Croy, director of business-continuity solutions at Forsythe Technology, an IT consultancy. "But that's just not feasible anymore because most organizations have too much data, too many applications and too many interdependent processes."

The solution is to take a holistic view of the business and bring back only the most critical applications right away. "It is not always feasible to bring everything back straightaway," says Penny Turnbull, senior director for crisis management and business-continuity planning at Marriott International, in Washington, D.C. "If you don't need certain things immediately, you can be wasting time, effort and money planning for their recovery. And that's what business-continuity planning is all about: Knowing the must-haves, because you can't recover everything."

Marriott has built an enterprise business-continuity framework that guides users through the process of deciding business process and application criticality and tailoring continuity plans accordingly. "You need to put applications into context because this isn't business as usual," Turnbull says.

2. Weigh criticality against overall cost. In some cases, business-continuity planners need to weigh even the most critical applications against the overall cost of recovering them after an incident.

"You can create any solution if you have enough money," E-gatematrix's Flanigan says. "But in a lot of situations, you don't have to."

Instead of instantaneous recovery, E-gatematrix realized it could get by on a four-hour window for getting its most critical applications up and running after a disaster, he says. "Just because the technology is available to get everything back right away doesn't mean my business can afford it. I try to craft the solution that best fits the needs of the business and go from there," he says.

3. Buy with an eye toward business continuity.

EDITOR: Beth Schultz

EXECUTIVE EDITOR: Julie Bort

DESIGNER: Brian Gaidry

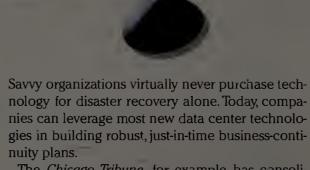
MANAGING EDITOR, FUSION: Melissa Shaw

Online Graphic Designer: Eric Anderson

Copy Editor: Kyle Connors

NETWORK WORLD EDITORIAL DIRECTOR: John Gallant

NETWORK WORLD EDITOR IN CHIEF: John Dix



The *Chicago Tribune*, for example, has consolidated its critical applications onto two Sun Fire 15K servers, located on opposite sides of town, says Pete Mashek, director of production systems at the newspaper. It links those servers via AT&T fiber and Nortel metropolitan Ethernet switches. The whole point was to build more reliability into the production systems, but the company also made huge strides in business continuity.

"We needed to upgrade anyway, so it made sense for us to take disaster recovery into account while we were at it," Mashek says. "From a purely financial point of view, disaster recovery is a cost. But when you're buying new equipment and putting in new architectures to support the business anyway, you can mitigate the disaster-recovery costs at the same time."

For the *Tribune*, the result is an active-active clustering solution that supports day-to-day business and offers less than a second of downtime when a disaster affects one center.

4. Emphasize the "business" in business continuity. "Business continuity can't be a one-off anymore," Forsythe's Croy says. "It should be an integral part of day-to-day business."

This means evangelizing continuity across the business so that not only is it taken into account each time a new system or application is brought

online, but also so that business expectations and actual systems availability align appropriately. "There can be an awful lot of assumptions made about what's backed up, what's protected, what's recoverable, how quickly and who's going to do it," Marriott's Turnbull says. "It's only when you sit down and talk it through that you find the gaps."

Ensuring ongoing discussions between the business units and Information Resources (Marriott's technology department) is a core part of her job, Turnbull says. The goal is making sure assumptions are correct and everyone is clear on their roles and responsibilities.

"The business-continuity planning discipline has changed so much in the last few years. It used to be much more technology-focused. Now it needs to be far more comprehensive," she says. "You need to go beyond technology to look at the whole business — the people, facilities, assets, reputation and brand image, and so on. It has to become part of everyday operations."

5. Don't get enamored with technology. Sometimes a company can support critical business processes with plans that involve simple paper-based procedures or focus on more important assets, such as people. Bottom line, it is important to recognize which business processes can go manual, Turnbull says.

At Marriott, this emphasis on the bigger picture of business continuity as opposed to simply a technology-centric view, was underscored during the Sept. 11 terrorist attacks, Turnbull says. Sept. \$\frac{1}{2}\$ "highlighted the importance of people," she says. "You can recover all the systems you want in the world, but if you don't have people to operate and utilize them, then why are you recovering? Business continuity is more than that."

Cummings is a freelance writer in North Andover, Mass. She can be reached at jocummings@comcast.net.



Introducing DuPont™ certified limited combustible cable. In the event of a fire, securing your business' uptime is crucial. The data communications cable you choose could play a key role in protecting your network technology investment. DuPont™ certified cable produces 20 times less smoke than other plenum rated cables. And less smoke means less costly downtime, making it the most advanced fire safety cable technology available today. To learn more about DuPont™ certified limited combustible cable or to request a free CD, log on to teflon.com/cablingmaterials or call 1-800-207-0756.



The miracles of science™



### Downtime

Server clustering and virtualization give users a better

road to dependability.

**BY JENNIFER MEARS** 

hen MLT Vacations scrapped its pricey Sun hardware for a cluster of IBM Linux blade servers to support its Oracle database, it expected to

see savings. But the company got something even more: a database environment it truly could depend on 24/7.

That was "icing on the cake," says Chris Corona, manager of systems services for the online provider of travel packages, in Edina, Minn.

Emerging clustering and virtualization technologies can bring high-end capabilities to low-priced, standards-based servers that have been pumped up with performance and reliability improvements. In turn, IT managers get a wider choice when it comes to mapping business continuity plans. Many, like Corona, are finding that the tools they've selected to make the data center more dynamic—and, interestingly, to cut costs—are creating a more reliable environment to support critical-business processes. Should a failure occur, applications that aren't tied to the hardware on which they run easily can be moved from one virtual server to another or within a cluster.

"When you thought about business continuity, you used to think replicated servers, replicated data and separate physical machines," says Joe Clabby, an analyst with Summit Strategies. "Now you think resource pool."

At International Truck and Engine, a Warrenville, Ill., manufacturer, IT Manager Barry Naber keeps applications running smoothly using VMware's VMotion. This tool lets users move virtual machines among physical servers.

"We brought VMware in for server consolidation and realized it's much bigger than that. It's also business continuity," Naber says. "With VMotion, if one server within our VMware farm is getting hit more heavily than the others, we can move users over to another server unbeknownst to them and allow the application to function without having to take the server down. Before, end users would have experienced an outage."

International Truck and Engine has about 150 VMware partitions running on less than a dozen servers. The company has avoided about \$1 million in hardware costs, Naber says.

#### The tech choices

While VMware, now an EMC company, largely created the virtualization market for x86 servers, others, such as Microsoft, SWsoft and the open source virtualization project Xen, now offer alternatives. IBM, HP and Sun also provide tools to make virtualization and clustering simpler to deploy in enterprise data centers. And clustering tools aimed at making it easier to tie together disparate systems are available from companies such as Emic Networks, Neverfail Group, Penguin Computing PolyServe and Olusters.

"What you'll see is more and more integration of all these types of technologies, which lend themselves to more choice and more capabilities within the IT infrastructure for doing business continuity," says Jim Sangster, director of N1 and availability marketing for Sun. "What typically has only been available on mainframe-class systems — well, now we can do it on a cheap little Opteron box."

The move to Linux and Intel-based systems is expected to save MLT Vacations as much as \$1 million over the next five years, Corona says. Maybe more importantly, with the Linux-based cluster, which uses PolyServe on the back end to man-

Now . . . getting back online takes as long as it does to restart the application, which can be done remotely in about 15 minutes.

- CHRIS CORONA, manager of systems services, MLT Vacations

age the distribution of data across the server nodes, the company says it hopes eventually to eliminate downtime altogether.

"The way things worked before, if we had an outage in a database server, we were probably looking at anywhere from two to four hours of downtime," Corona says. "Now, as long as there is one node up and running, getting back online takes as long as it does to restart the application, which can be done remotely in about 15 minutes." During the next year, Corona plans to make the reservation application cluster-aware "so it can reconnect on failure," he says.

The need to reconnect upon failure is what led online mail order pharmacy CanadaDrugs.com to clustering on low-cost Linux servers, says Curtis Anderson, IT director at the Winnipeg, Manitoba, company. As a Microsoft user, the company had faced outages weekly. Today, it uses Emic's high-availability clustering software to keep Linux applications up and running.

"We didn't really have a business-continuity plan before we brought in the cluster," Anderson says. Downtime was costing CanadaDrugs.com about \$50,060 per week, he says.

"Now that the application is distributed across multiple nodes and clustered, it gives you more options" when it comes to business continuity, Anderson says.

Wayne McDilda, senior security analyst for Mirage Networks in Austin, Texas, and a member of HP's Encompass user group, says IT managers looking for options are zeroing in on these new virtualization and clustering technologies as they move toward utility computing.

"As different platforms evolve and become more mature, the focus on the hardware and applications is de-emphasized," he says. "You're more focused on the actual business you're trying to conduct and therefore the continuity of that business. ... You no longer care what's in the background, you just need that business service to be available."

KRISTINE HSVKAN



A lot of products claim to reduce the complexity and cost of enterprise backup. But one actually delivers—the Scalar<sup>®</sup> i2000, part of the growing iPlatform<sup>™</sup> family from ADIC, the leading provider of tape libraries for open-systems backup.\*

**Embedded intelligence.** The Scalar i2000 is the first library to integrate advanced management functions—proactive monitoring, built-in partitioning, automated diagnostics, and I/O management—so it delivers faster and more reliable backup and uses less of your budget, time, and staff.

Faster resolution, fewer service calls. Smarter diagnostics and dedicated service teams mean fewer interruptions and faster resolution. The Scalar i2000 requires half the service calls of conventional libraries. And the worldwide ADIC service team solves problems before customers see them.

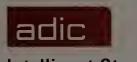
**Capacity on demand.** As its name suggests, the Scalar i2000 is designed to scale with your storage needs. So you don't have to worry about running out of space or paying for more than you need.

After all, you were hired to use your brains for more important things.

\*Market share from Gartner Dataquest, Tape Automation Systems Market Shares, 2003, F. Yale, April 2004.

Visit www.adic.com/i2k to get your free Aberdeen Group white paper:

Taking an Intelligent Step Forward in Tape Backup and Restore.



Intelligent Storage™

Available through EMC Corporation, your complete source for information lifecycle management solutions. Call your local ADIC or EMC sales representative for more information.

Copyright 2005 Advanced Digital Information Corporation (ADIC), Redmond, WA, USA. All rights reserved. Created in USA.

EMC. where information lives

### Remembering every instant

Continuous data protection takes apps back to any point in time for unbeatable recovery.

BY DENI CONNOR



al Weiss, senior systems engineer for Baptist Memorial Health Care, needed to save time and get at data faster. Using traditional back-up and recovery software, backing up two Windows servers supporting a business-critical application and image files was taking as many as 11 days.

That meant the Memphis, Tenn., healthcare system never really had a handy data source to restore from, Weiss says. Whenever Baptist needed to use the back-up resource, it had to run massive log file changes and do multiple restores, he explains.

After evaluating a variety of software, Weiss found just what he needed — a new form of backup and recovery called continuous data protection (CDP). Available from start-ups such as Mendocino Software, Revivio and Storactive, CDP products offer a time-sensitive approach to backing up and recovering data. With CDP, a record of every change to data is written to disk. This makes it possible for CDP software to return any application, database or file system to any previous point in time or process.

Using Revivio's Continuous Protection System (CPS) 1200, one of the first CDP products on the market along with Mendocino's TimeSpring, backups are now a breeze at Baptist. "Now I can literally restore the application and image files within seconds instead of days," says Weiss, adding that this saves IT staff time and the company money.

Now Weiss is testing out the CPS 1200 with a financial application that he must shut down before running a backup. "The only time we can do a backup on that system is at midnight when all the users are off the system," he says. "The application can be shut down and we can do a cold backup, so we only have a backup we can go to every 24 hours."

With CDP, Weiss could back up the application continuously and give users access to current information should the application fail. "Based on the testing we've been doing we could actually get everything back up and running within 15 minutes," Weiss says.

#### In users' hands

Like Revivio's CPS, most CDP packages focus recovering applications, databases and files and rely on the system administrator to recover users' clientside data. But Storactive's LiveBackup for PCs lets administrators or users recover lost files from Windows desktops or servers. Microsoft, too, will offer recovery by administrators or users when it ships its Data Protection Manager later this year.

The National Renewable Energy Laboratory (NREL) uses Storactive's CDP software to back up 600 desktop PCs at the Golden, Colo., organization. Previously, the lab used traditional back-up software —Veritas Software's Backup Exec — to protect these desktops. Because NREL is a governmental agency, users are required to change their passwords every three to six months. That meant that two to four times a year, the IT staff had to modify 600 scripts for scheduled desktop backups or the back-up operation wouldn't work, explains Todd Wessels, a systems engineer at the lab.

"Eighty percent of our data is sitting at the desktop level. A lot of it is really valuable data — if a researcher were to lose a hard drive, it would be catastrophic," Wessels says. "Using LiveBackup for PCs, researchers can recover their own files." He also says that this not only lets them get back data faster but without asking for help from IT.

With positive results coming from early adopters such as Baptist and NREL, interest in CDP is growing fast — and that has the big storage and back-up vendors closely looking at the technology. EMC and Veritas have announced their intentions to introduce CDP software, and just last month Network Appliance acquired Alacritus Software, a start-up with a CDP product.

CDP will supplement, not replace, traditional backup and recovery products such as EMC Legato's Networker and Veritas' Backup Exec. Corporations still will rely on such tools, which store data to disk or tape on a scheduled basis, for long-time data archiving.

But no doubt, CDP and its disk-based backup is the future for data protection of both servers and workstations on the network, analysts say." It seems highly likely that all of the major strategic vendors will have CDP offerings in the next 24 months. It's hard to imagine a scenario where this is not the case," says Brad O'Neill, senior analyst at Taneja Group.

"Without any point-in-time recovery you cannot establish higher-level application integrated recovery schema," O'Neill adds. "For that reason alone, there is no question that CDP will have a fundamental role in future data centers."

#### **Continuous backup bonanza**

A sampling of the vendors that offer continuous data protection.

Product	Implementation	Description	Availability pri e
Network Appliance's Chronospan	Host-based software.	Will provide Windows, Linux and Unix support for databases, file systems and other data.	In beta now/price based on amount of data protected.
Mendocino Software's RealTime	Host-based software.	Protects database, file and application servers.	Now/starts at \$50,000.
Microsoft's Data Protection Manager	Host-based software.	Will support Windows file servers only; will let users recover files.	Second half of 2005, pricing unavailable.
Mimosa Systems' NearPoint	Host-based software.	Specifically for Exchange databases.	In beta now/pricing unavailable.
Revivio's Continuous Protection System	Hardwars and software, includes storage capacity.	Supports databases, file systems and other data; is operating system and data agnostic.	Now/\$250,000.
Storactive's LiveBackup for PCs	Host-based software.	Backs up Windows PCs and lets users recover PCs.	Now/\$25-\$75 per user.
Storactive's LiveServ for Exchange	Host-based software.	Specifically for Exchange detabases.	New/\$1,995 per Exchange agent and 25 users.
TimeSpring'sTimeData	Host-based software.	Recovers applications and transaction-oriented data.	Now/starts at \$1,300 per file server.
XOsoft's Enterprise Rewinder	Host-based software.	Backs up Exchange, SQL Selver and Oracle environments.	Now/starts at \$25,000.



#### This is what we have in mind for your WAN.

#### the later of the second second

Most opplications and protocols were designed to run locally. Over o WAN, they grind to a halt. That's why Riverbed developed o solution built on rodically new, patent-pending technology that octually delivers LAN-like performance across your WAN. Even for chatty opplications that can break down ocross the most robust networks.

Riverbed's proven salution allows your enterprise to consolidate IT infrastructure at the doto center, aptimize your bondwidth usage, and still deliver applications and dato over your WAN—of speeds that make remote data feel local.

We're so confident that Riverbed can improve your WAN application performance, we'll even let you try it for 30 doys, risk-free. Call us of 1-87-RIVERBED to get started right oway, or visit www.riverbed.com/NW today.



er training the second

# The SPULLON BUSINESS CONTINUITY BUSINESS CONTINUITY answer

How to make the most of this robust WAN technology.

■ BY DEB RADCLIFF



hen faced with recovery after the Sept. 11 terrorist attacks, Syed Ghaus had to reroute his users to a New Jersey branch office so they

could access the corporate network using dial-up connections from laptops. With a private Multi-protocol Label Switching-based network, he says, failover would have happened seamlessly.

For Ghaus, who has since joined Resun Leasing, MPLS has become a facet of business continuity. The flexible, decentralized routing structure of MPLS allows connectivity among 34 branch offices in the U.S. without requiring routing through a hub, says Ghaus, who is director of business technology at the Dulles, Va., supplier of modular buildings. Thus, MPLS eliminates the single point of failure found in traditional spoke-and-wheel networks.

This any-to-any connectivity presents a great opportunity for redundancy and seamless transition to back-up systems and applications at other locations. But as with any new technology, early adopters warn, MPLS comes with trade-offs. And without proper planning, MPLS can create more problems for business continuity than it solves.

Scott Peterson, director of network services for Accenture, points to standards as one weak point MPLS is still new, so standards for vendor peering and multi-carrier QoS only now are making service-level agreements (SLA) achievable. So while you might have a strong MPLS network out in the WAN cloud, you could have trouble with last-mile local connections, he says.

#### Planning for the apps

Defining how mission-critical applications are transported over the MPLS infrastructure becomes highly important because of IP's nebulous nature, Peterson says. So you must take the time to map the IP infrastructure with performance and end-to-end management. "Then you can achieve a continuous quality of service across the infrastructure, into your data centers and remote facilities, and pass it off into the cloud" for the carrier to uphold, he says.

IT departments already should know the applications most critical to the business and how they're being used. So defining QoS should be easy But to make your MPLS network even more fail-safe, you should take the opportunity to standardize platforms, applications and versions, suggests Jermaine Mason, IT manager at Wilson's Sporting Goods, a division of Ameri Sports in Chicago.

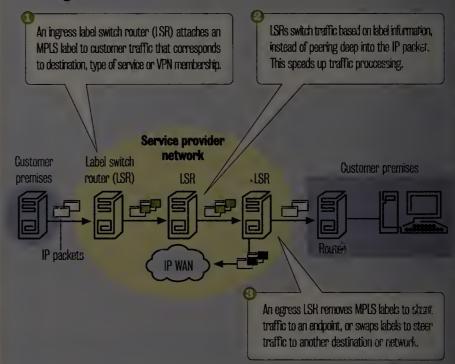
Then you need to select a carrier that can guarantee end-to-end service quality. The carrier also should be able to accommodate security requirements (primarily IP VPN) and support new, demanding applications (such as VoIP and videostreaming) with minimal latency, early adopters say.

Large carriers offer two ways to allocate bandwidth — static and dynamic. MCI. for example, offers committed access rate for static bandwidth allocation and supports differentiated services for dynamically allocating bandwidth to applications that otherwise would be affected by link tailures or congestion. Some carriers offer the ability to directly run over the Internet using a VPN, which most companies chose for better privacy and reliability.

But not every carrier supports dynamic bandwidth allocation, so getting exactly what you need from your MFLS network might require writing your own tools, early adopters say.

#### **MPLS** at work

How Multi-Protocol Label Switching keeps the WAN traffic flowing.



Champps Entertainment, for example, uses an MPLS VPN from Netifice Communications to create any-to-any tunneling between 51 restaurants and the Littleton, Colo., headquarters. "When moving to the MPLS VPN, we ... wrote a homegrown application to crank up and down the amount of bandwidth to make room for videoconferencing when needed," says Steve Johnson, IT director for Champps.

#### **Managing MPLS**

Another gotcha with MPLS can be management complexity, as those same routing redundancies that make MPLS so hardy also make it more difficult to manage. With MPLS, you need a way to monitor your network to check on bandwidth allocations and hold service providers accountable to SLAs.

"We're trying to run transport at 300 milliseconds or better from global offices to our centralized data centers," says Peterson, who uses an integrated, multi-vendor suite to manage and monitor Accenture's MPLS infrastructure. "We want our network to be a business enabler, not the other way around."

Most businesses manage to their edge routers and then hand off management to the carrier, although carriers such as MCI will manage all the way through to the data center if clients are willing to pay for the service and are willing to give up control. "I wanted a hybrid relationship with my carrier, so I manage my part of it, and MCI clearly knows what it's responsible for," Ghaus says. "This reduces finger-pointing by a great deal."

Finally to prevent outages during the transition to MPLS, Johnson recommends running the MPLS network in parallel with your current network for a few months to be sure everything's going smoothly before completing the transition.

"You need to understand you can mess up your installation if you don't introduce quality of service on your network before you move to MPLS," Ghaus says. "Know your network. Know your business. And know the applications. Then take all this information and overlay it on top of your MFLS."

AT&T

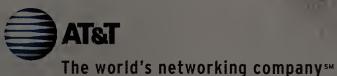
and

1-800-FLOWERS.COM

Can your network make flowers grow?

**1-800-FLOWERS.COM® AND AT&T.** When 1-800-FLOWERS.COM wanted to transform the nature of their business, they cultivated a relationship with the world's networking company. With world-class web hosting and ultra-available continuity services, AT&T helped 1-800-FLOWERS.COM become the local florist with global reach. So now high-traffic e-commerce is as easy as a tiptoe through the tulips. These custom networking solutions have even allowed them to blossom into new ventures like Plow & Hearth® and the Popcorn Factory.® Today, with 15 million customers, 1-800-FLOWERS.COM is the leading multi-channel floral and gift retailer in town. Not to mention the entire country. **CAN YOUR NETWORK DO THIS?** 





To find out how AT&T's networking solutions helped 1-800-FLOWERS.COM transform its business, go to: att.com/flowers



# IT monitoring with a Company of the Company of the



Business activity monitoring tools strive to turn threatening events into non-issues.

■ BY ANN BEDNARZ

efore law firm Hogan & Hartson can sign a new client, it has to make sure the addition won't create any conflicts of interest with its current business. An examination can turn up dozens of potential conflicts that typically require attorney attention.

"Among the folks who have to respond to these conflicts issues are our senior partners — some of the most time-pressed, mobile and expensive personnel," says Bill Gregory, ClO at the Washington, D.C., firm. "We can't proceed until they comment."

To speed along the business-intake process, Gregory rolled out workflow and business-process monitoring software from Metastorm and gave the attorneys wireless BlackBerries from Research In Motion to make sending and receiving comments easier for them. Built-in alerts remind attorneys and notify conflicts staff if an RFC has gone unanswered for a certain period of time.

When a new business gets the go-ahead, the Metastorm software is designed to provide immediate notice to various internal teams so they can ready resources such as technical or administrative support. "In the past, there wasn't an easy way to dip into a bunch of paper file folders and get that information out to the proper parties right away," Gregory says. A few days make a big difference when trying to line up appropriate project resources, he says.

At Hogan & Hartson, the Metastorm software watches for bottlenecks — but not the kind Gregory is used to hearing about as CIO. Instead of watching for device failures or network slowdowns, the software is watching for lapses in the execution of a business process.

Business-activity monitoring (BAM) is gaining ground among early adopters who want to more quickly become aware of and respond to changing business conditions. The technology provides the business equivalent of an e-mail notifying an airline passenger of a flight delay or a text message alerting an eBay customer he's been outbid.

BAM technology extracts operational data from multiple transaction systems, melds it, and compares it to historical data. Correlating all these sources helps companies assess the business implications, based on historical precedent, of events in real time. The sooner a company becomes aware of a problem — an inventory shortage, sales forecasting discrepancy, or increase in fraudulent transactions, for example — the sooner it can take corrective action to avert business threatening conditions.

BAM also includes ongoing reporting capabilities. At Hogan & Hartson, replacing what were ad hoc paper-based methods with clear, auditable steps not

only speeds the business intake process but also provides the firm with metrics such as how long it takes each matter to clear the conflicts investigation stage, how many matters are pending and how much potential business is turned away because of insurmountable conflicts.

"Every law firm runs into situations where it can't take on a piece of work because of insurmountable conflicts. In the past, we didn't have good insight into what those occasions were," Gregory says.

Bill Gassman, a principal analyst at Gartner, likens

BAM to network and systems management — with a twist. What makes BAM more complex than traditional IT monitoring is that more varied types of events are gathered and analyzed, he says.

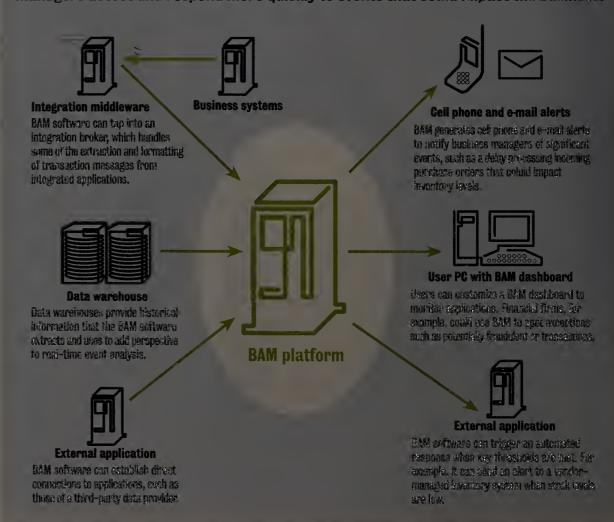
Rules in the IT world largely are about device and performance thresholds. Rules in the BAM realm are about correlating system and transactional events, such as the issuance of a purchase order, and then putting a predictive spin on the implications of those events. That's much harder for a system to do — for example, deducing from a broken-down truck that goods might not ship on time and that the late delivery might lead to a potential fine, Gassman says.

#### **Getting started**

A range of vendors offer BAM tools, including business process management players such as Fuego
See Process, page \$14

#### **Streamlining operations**

Business activity monitoring (BAM) software draws transactional and operational information from myriad real-time and historical data sources to help IT and business managers detect and respond more quickly to events that could impact the business.



Choose and receive any of these 3 valuable APC white papers within the next 90 days for FREE!

**Key Code** http://promo.apc.com

(888) 289-APCC x3387 • FAX: (401) 788-2792

a442x



#### Choose and receive any of these 3 APC white papers within the next 90 days for FREE!

"Cooling Audit for Identifying Potential Cooling Problems in Data Centers" "Ten Steps to Solving Cooling Problems Caused by High Density Server Deployment" ☐ White Paper #117 "Network-Critical Physical Infrastructure: Optimizing Business Value" YES! Please send me my FREE white papers. DNO, I'm not interested at this time, but please add me to your mailing list. Address 2: E-mail: Yes! Send me more information via e-mail and sign me up for APC PowerNews e-mail newsletter. Key Code a442x What type of availability solution do you need?

□ UPS: 0-16kVA (Single-phase) □ UPS: 10-80kVA (3-phase AC) □ UPS: 80+ kVA (3-phase AC) □ DC Power
□ Network Enclosures and Racks □ Precision Air Conditioning □ Monitoring and Management
□ Cables/Wires □ Mobile Protection □ Surge Protection □ UPS Upgrade □ Don't know

Purchase timeframe? □ <1 Month □ 1-3 Months □ 3-12 Months □ 1 Yr. Plus □ Don't know

You are (check 1): □ Home/Home Office □ Business (<1000 employees) □ Large Corp. (>1000 employees)
□ Gov't, Education, Public Org. □ APC Sellers & Partners

©2005 APC. All trademarks are the property of their owners. ISX4A4EB-USe • E-mail: esupport@apcc.com • 132 Fairgrounds Road, West Kingston, RI 02892 USA



#### **BUSINESS REPLY MAIL**

FIRST-CLASS MAIL PERMIT NO. 36 WEST KINGSTON RI

POSTAGE WILL BE PAID BY ADDRESSEE

#### APC

ATTENTION CRC: a442x
Department: B
132 FAIRGROUNDS ROAD
PO BOX 278
WEST KINGSTON RI 02892-9920

Mandaladdaaddaddaaddhaddad

02892-9920

NO POSTAGE NECESSARY IF MAILED IN THE UNITED STATES

#### **How to Contact APC**

Call: (888) 289-APCC
use the extension on the reverse side

Fax: (401) 788-2792

Visit: http://promo.apcc.com use the key code on the reverse side



### Introducing data centers <u>on</u> <u>demand</u>

New architecture supports power densities of today... and tomorrow



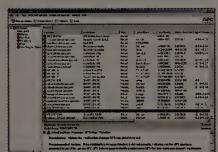
Part Number	Usable IT Racks	Average kW per Rack	Price to buy	Price to lease (36 installments)	
ISXCR1SY16K16P5	1	up to 5kW	\$14,999*	\$499**	
ISXT240MD6R	6	up to 5kW	*149,999*	\$4,999**	
ISXT240MD11R	11	up to 5kW	\$249,999*	\$7,999**	
ISXT280MD40R	40	up to 5kW	\$699,999*	\$21,999**	
ISXT2800MD100R	100	up to 5kW	\$1,649,999*	\$50,999**	
High Density Configuration (shown above)					
ISXT280HD8R	8	up to 10kW	\$399,999*	\$12,999**	

with scalable, top-tier availability.

High density upgrades start at \$10,999 On-site power generation options start at \$29,999

#### All multi-rack configurations feature:

- √ N+1 power and cooling
- ✓ Peak capacity of 20kW per rack
- ✓ Enhanced service package
- ✓ Integrated management software



InfraStruXure™ Manager

### Order your solution today. Call 888-289-APCC x3387.

#### Visit today and receive FREE APC White Papers

Visit us online and download APC White Papers.



#### Don't see the configuration you need?

Try APC's online InfraStruXure BuildOut Tool today and build your own solution.

Go to http://promo.apc.com and enter key code a442x Call 888-289-APCC x3387

InfraStruXure™ BuildOut Tool

\* Prices do not include IT equipment and are subject to change. \*\* Indicative rates are subject to market conditions. \*\*\* Install and delivery times may vary.

- ✓ Secure, self-contained environment



### data center on demand?

### InfraStru

#### DATA CENTERS ON DEMAND

Highly available and manageable, quick-to-install, scalable architecture that easily supports both standardand high-density applications.

- Up to 20kW a rack for any blade server application
- Unlimited racks
- Ships in 5 days \*\*\*
- Installs in 1 day\*\*\*
- Optional on-site power generation
- Raised floor not required
- · Vendor neutral guaranteed compatibility







InfraStruXure™ can be purchased as a modular, or mobile system





**Process** continued from page S12 and Metastorm; integration vendors such as Tibco Software and SeeBeyond; infrastructure platform vendors such as BEA Systems, IBM and Oracle; and businessmonitoring specialists such as Celequest.

The software today typically runs on its own server and ties into business applications via application-integration middleware (or directly in the absence of a message broker infrastructure) to draw transactional data. It typically heoks into data warehouses for access to historical business information.

The technology isn't extremely hard to get up and running, but using it effectively can be, Gassman says. "The real challenge is in doing something valuable with the alerts," he says.

Appropriate alerting depends on careful configuration of company-specific process rules and notification protocols."There's no magic behind [BAM alerts]. You have to define your business models and business rules, and there's coding involved to make that happen," says Angela Venuk, director of product development at GTESS in Richardson, Texas.

GTESS, a medical claims processing outsourcer, uses Fuego software to keep tabs on its operations. The software sends alerts when handling exceptions such as incomplete claims information could potentially put the company in danger of not meeting a service-level agreement. By doing more proactive analysis of process data, as opposed to post-processing audits, GTESS can resolve problems earlier and reduce wasted processing time, she says.

One benefit of Fuego's business-process management platform is reusability. Venuk says. For example, GTESS can make use of a current time-out scenario — the steps to take if a transaction is taking too long — in multiple processes. "We can tweak it from one process to the next," she says.

At CenterPoint Energy, BAM software helps IT Manager Mary Rich mask the complexity of an enormous application-integration effort and feed relevant business diagnostics to departments in the Houston energy delivery company.

CenterPoint rolled out software from SeeBeyond for its application integration work and uses the same platform for BAM. The combination lets Rich retain one team to support the entire rollout."It makes operating costs a lot cheaper," she says.

With the BAM tools, CenterPoint delivers customized diagnostic dashboards to users in different departments such as revenue, business-process management, billing and credit. The handoff takes the load of tracking each transaction failure off of the IT team. At a company that processes 500,000 transactions per day, the burden lifted is huge, Rich says.

She advises IT executives considering BAM to put in the time upfront to figure out what kind of monitoring will most benefit users. "Ask whoever is going to get the data, 'What is your biggest problem? What will you do when you get data from us?" Rich says. Then make sure the project includes the necessary data extraction and retention resources - such as a proper database design."Don't wait until the end to figure out how you're going to capture and store that information," she says.

And don't get too alert happy, GTESS' Venuk adds. "It can become overwhelming and non-effective if people are getting alerted too often."

### World Class Communications Anywhere in the World™







Satellite communications ruggedized for remote locations and harsh environments.

> **Secure Corporate Networking Digital Telephony Broadband Internet** Real-Time Video

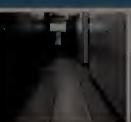
For more information call 1-888-482-0289.

CapRock



YOU SEE A NETWORK. we see storage managers and network managers both getting what they want.







#### ADAPTIVE WAN

Download our Storage Extension White Paper at

>> ciena.com/storage

#### YOUR OPINION

# Talk it up

Disaster recovery gets the floor in this ongoing roundtable discussion among IT execs.

#### **■** BY JULIE BORT

Clustering and virtualization, continuous data protection, and business-process monitoring are becoming integral pieces of progressive business-continuity plans. Three IT executives recently gathered to discuss these new data center technologies and how they're putting them to use for disaster-recovery purposes. Participating in this, second in an ongoing roundtable series, are Tony Adams, IT analyst, J.R. Simplot, in Boise, Idaho; Matthew Dattilo, vice president and CIO, PerkinElmer, in Wellesley, Mass.; and Rael Paster, head of collaboration services IT, Serono, Geneva.

#### Clustering, virtualization – what are your thoughts on how such emerging technologies can keep your servers running?

Adams: Our core disaster-recovery strategy is rapidly shifting away from tape-based restore of physical systems. Instead, we are working to virtualize as much of our x86 workload as possible and leverage long-distance [storage-area network]-to-[storage-area network] capabilities to maintain concurrent data at the disaster-recovery target site. With virtualization, we will be able to concurrently maintain exact copies of entire virtual machines at that site and be able to boot those virtual machines on arbitrary hardware. Virtualization completely eliminates the need to have a 1-to-1 inventory of identical physical hardware between data centers.

We accept that disaster-recovery operations can be degraded from a performance standpoint. Therefore we are able to budget lower total 'horsepower' for our recovery systems. This allows us to fully meet business functional requirements with lower CPU and storage costs.

Dattilo: For us, the emergence of these technologies has been exciting in that they're allowing us to significantly reduce the occurrence and severity of those hardware outages that would impact us in the 'several hour to a couple of days' range, depending on application.

While we've had these capabilities in our Unix environment for years, extending clustering and virtualization to our Windows/Intel-based environments has given us better choices of platforms, and better reliability in this environment. Lagging certification by applications providers has been a concern, but I don't see it as a long-term barrier.

We're bifurcating our outages into the short [couple of hours or typically less] network/software issues, and the site disaster scenario. We haven't found a cost-effective way to build the redundancy to eliminate the former or to harden ourselves against the latter scenario.

#### Have you investigated continuous data protection (CDP) technology and, if so, what do you think about it?

Adams: We haven't investigated CDP in particular but have made recent changes to our back-up infrastructure to attain at least one of the stated benefits. We now use [Serial Advanced Technology Attachment] disk as our first-level back-up medium. This has greatly reduced our restore times because primary images are typically available without requiring offsite media retrieval. To meet offsite storage requirements, we duplicate the SATA-based images to tape on a daily basis.

CDP may become more appealing if our back-up vendor were to offer it.l see this as a back-up solution, and I'd prefer to keep our entire back-up solution as integrated as possible.

Paster: We explored CDP and were quite impressed with our findings. As a result, we deployed Storactive's LiveBackup to our users last year and now include it in our standard workstation image. CDP for servers/SAN/[network-attached storage], etc. is still currently best suited to snapshot- or transaction-based back-up technologies.

### Business-process monitoring is said to be the "next big thing" in IT management. How feasible is it and what sorts of IT systems would you need to make it work?

Adams: The main feasibility requirement is that the application or business



process must accommodate functional real-time monitoring. This would typically involve a suite of test transactions run periodically and tested for validity. This type of monitoring is completely feasible with today's ERP systems with centrally located and enforced business functions. This architecture allows a common approach to monitoring the potential multiple interfaces to the central business functions.

A well-designed centralized monitoring application, such as Nagios [an open source program], is capable of directly executing [or executing by proxy] the test transactions.

Paster: I believe this is quite feasible, and the business will demand it. We've already seen that our Web dashboards have become immensely popular and for good reason. They are the 'enterprise consoles' for business performance management, which correlates disparate business events to key performance metrics and gives the business managers real-time visibility.

Our existing systems will become more sophisticated and will 'naturally' evolve to become business-process monitoring orientated Application performance and availability can be easily assessed and managed according to their service levels and business priorities. We've been using Mercury and Tivoli for our [service-level agreement] management. The next step is to fully integrate the various tools into our business intelligence so that we may among other things,

accurately assess the business impact of application downtime and prioritize problem resolution based on business impact.



#### Disaster-recovery hot spots!

The tech talk continues online. These executives describe their biggest trouble spots with disaster recovery. www.networkworld.com; DocFinder: 7221



Fr: up nights about business continuity

To: up for a promotion



KEEP YOUR BUSINESS UP AND RUNNING WITH EMC BUSINESS CONTINUITY

**SOLUTIONS.** EMC provides a broad range of software, services, and systems built for your needs today, and the flexibilty to add capacity and capabilities tomorrow. Whether it's reliable backup and restore, or realtime, multi-site replication, we help you make business continuity a reality. Ensuring your information and applications will always be there when you need them. To learn more, visit www.EMC.com/continuity.

#### 640

## The new data center by the

From autonomic computing to virtualization, new data center technologies rate with readers.

■ BY BETH SCHULTZ

esperately seeking management relief, IT executives are turning to autonomic computing, virtualization, application performance monitoring and other new data center technologies as antidotes, a recent survey of *Network World* readers finds.

Better management and reliability drives IT decisions for 81% of the 824 readers surveyed (see "IT drivers" graphic, page S20), while 88% of respondents report that recent IT investments have entirely or partly gone toward developing the new data center (see "Investing in the new data center" graphic, right).

Autonomic computing garners the most interest among new data center technologies (see "Big draw," graphic). No doubt, respondents see autonomic computing as the way to ease deployment, management and security challenges. "It currently takes us seven hours a day just to monitor backups — much less to do everything else," says one respondent who clearly could benefit from the self-managing nature of an autonomic-computing system.

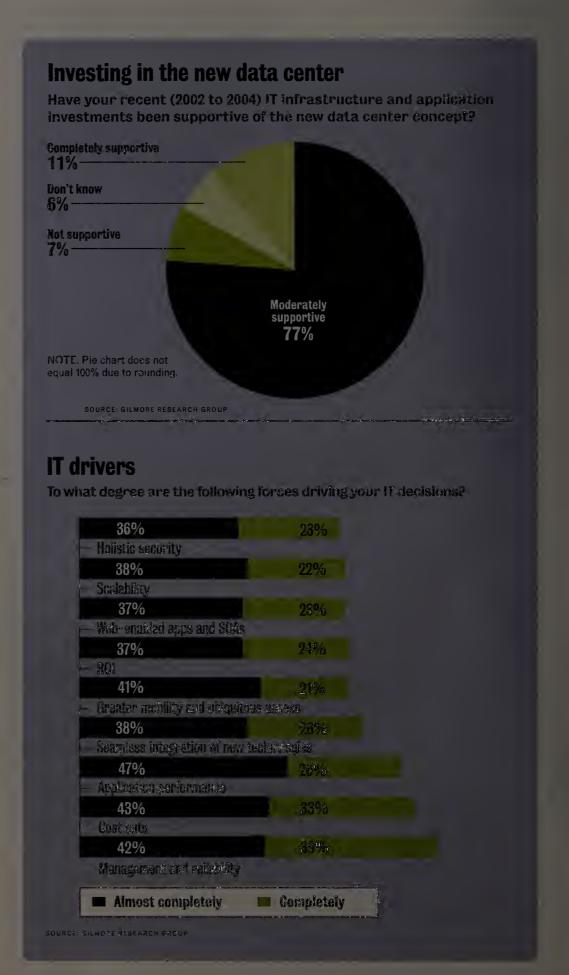
Improved application performance stands out as a big motivator for investing in a new data center infrastructure, with 65% identifying this as an important or very important reason behind network upgrades (see "What's behind network upgrades," graphic). Respondents also want management platform vendors to improve their application performance-monitoring features. Sixty-nine percent of respondents said they think it is important or very important that their platform management vendors provide a clear view of application performance and the ability to ensure that critical applications operate flawlessly.

Interestingly, the survey shows that most respondents know they must keep up with best practices for managing IT services. But many respondents aren't familiar with the foremost IT best-practices frameworks: the Capability Maturity Model Integration, Control Objectives for Information and Related Technology and the IT Infrastructure Library (see "IT best practices," graphic).

A disconnect also pops up when looking at the value respondents place on procedures such as mapping IT to business processes and the deployment reality. For example, 40% of respondents view mapping IT to business processes as very important. Yet only 10% have done so completely.

Such is the nature of the new data center. IT executives understand the value of the new data center, but still are mostly in the planning stages of how to use or are just beginning to embrace the antidotes.

See Survey, page \$20



#### It's 8am. Guess how many attacks hit your network last night.

Trust us, it's an unbelievable number.

But how do you get enterprise-class security without blowing your budget? SonicWALL® has the answer. We take state-of-the-art network security and make it simple, reliable and affordable. So you can feel secure.

Take our Gateway Anti-Virus/Intrusion Prevention Solution. It's real network security that delivers intelligent, real-time protection against the most sophisticated new viruses, spyware and network intrusions. It combines a powerful, deep packet inspection engine with a continuously updated database of the latest attack signatures. Comprehensive security in an affordable, usable package—that's the SonicWALL answer.

Take the guesswork out of network security. For more details on our Gateway Anti-Virus, Anti-Spyware, Intrusion Prevention and other dynamic threat management solutions visit **www.sonicwall.com/home/gav.asp** or call us at 1.888.557.6642.



Around the clock, around the world, and around the Web-SonicWALL is there for you.

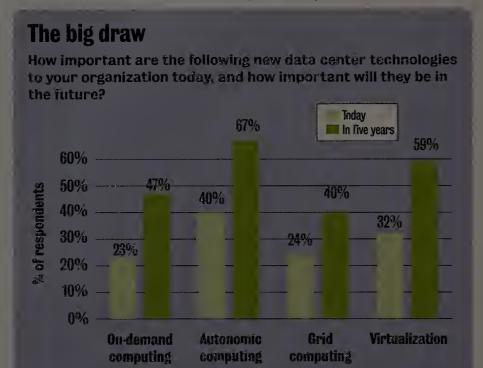


#### Survey

continued from page S18

#### Survey methodology

Fluke Networks commissioned Gilmore Research Group to conduct a survey of Network World readers and other IT professionals regarding the new data center concept and supporting technologies and business practices. A total of 1,018 qualified respondents participated in the survey. The results profiled here represent the 815 Network World reader responses only.



### **Production Tracking Over Ethernet**



SOUNCE: GILMORE RESEARCH GROUP

#### Eliminate your shop-floor PCs with ...

Ethernet Terminals from ComputerWise connected to your in-house LAN. Capture production data directly into files on your server.

#### Features & Benefits

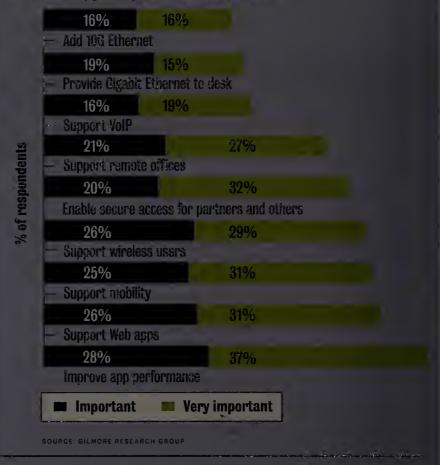
- Interactive Telnet Client
- TCP/IP over 10/100BaseT Ethernet
- Built-in Barcode Badge Reader
- Optional Mag-Stripe & RFID Badge Reader
- Auxiliary RS-232 Serial port
- Customizable Data Collection

**Program Included** larger keyboard and display sizes available

PUTERWISE. Lau 1-800-255-3739 or visit www.computerwise.com

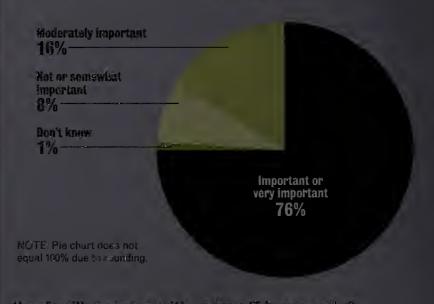
#### **Behind network upgrades**

Reasons for upgrading and their importance

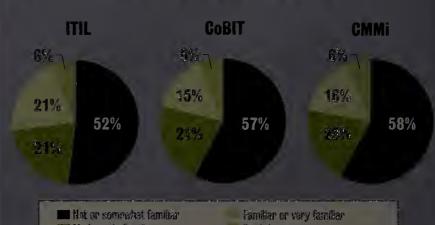


#### IT best practices

How important is it to stay current with best practices and procedures for managing IT services?



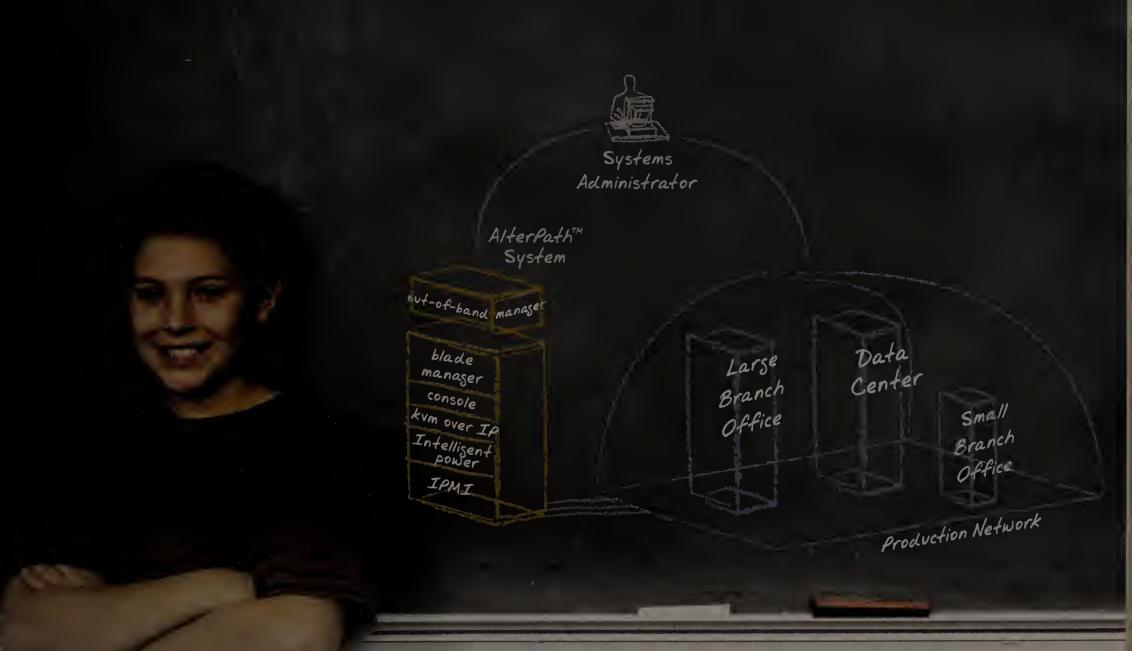
How familiar are you with various IT frameworks?



Don't know Moderately familiar

OURCE: GILMORE RESEARCH GROUP

# Cyclades AlterPath™ System makes out-of-band administration child's play



# For a FREE copy of Enterprise Management Associates' white paper Increased IT Operations Increased IT Operations Increased IT Operations Effectiveness With Cyclades AlterPath Cyclades AlterPath Cyclades AlterPath Out-of-Band Out-of-Band Infrastructure, please visit us at please visit us at www.cyclades.com/ema



#### The Next-Generation IT Infrastructure

Cyclades AlterPath™ System is the industry's most comprehensive Out-of-Band Infrastructure (OOBI) system. The AlterPath System allows remote data center administration, eliminating the need for most time-consuming, remedial site visits. When fully deployed in your data center, Cyclades AlterPath System lowers the risks associated with outages, improves productivity and operational efficiency, and cuts costs.

Each component of the AlterPath System is designed to seamlessly integrate into the enterprise, able to scale in any direction. Whether you need serial console management of networking equipment, KVM for access to Windows® servers, branch management, IPMI or HP iLO for service processor management, or advanced power management, the AlterPath System delivers. Cyclades brings it all together, making OOBI administration seem like child's play.

Over 85% of Fortune 100 choose Cyclades. www.cyclades.com/nw

**1.888.cyclades • sales@cyclades.com** 



© 2005 Cyclades Corporation. All rights reserved. All other trademarks and product images are property of their respective owners. Product information subject to change.

## Awasome in Stall

INSIDE THE

Oracle's Austin facility wins our New Data Center Award for grid use and more.



Thompson: We spent three years in a dramatic process of reducing the amount of infrastructure we had supporting our corporation and reduc-

Austin location.

**McGovern:** The IT budget in 1999 was in excess of \$500 million and our IT budget today is less than half of that. A large portion of those costs-savings is directly related to the global consolidation that we have accomplished.

ing our data centers around the world to [one] primary data center, which is the

#### What makes this data center unique?

**McGovern:** We have 3 petabytes of disk [storage capacity]. We are the largest Dell/Linux installation and the largest Network Appliance installation on the planet, under one roof.

#### Oracle's marketing message is all about grid these days. What role does grid play at this data center?

McGovern: There are multiple lines of business that utilize grid technology. We have a grid for our server technologies division. There is a mass of 5,000 servers, where developers around the world can take a slice of that computing power, do their eight to 10 hours of coding a day, then release that computing resource back into the grid to be utilized by another developer somewhere else in the world. Similar to that, we have an education grid for Oracle education training. They take a slice of the computing resource here in our education grid, teach their class, then release that computing resource back into the grid for the next class to take place somewhere else in the world. A grid also supports our application demo systems.

**Thompson:** So we have four grids. The development grid is used for development, but it is also to use our latest release of our technology internally. Then when we have proven it, we roll it out into the education, demo environments and the on-demand grids.

#### In what ways does the data center support Oracle's extended enterprise?

**Thompson:** Our customer data, which is one of our most important assets, is opened to our customers via our e-business portal, and that's housed in Austin. We also have a supplier portal hosted at our Austin data center. We have relationships with Cisco, [for] VolP technology. We are housing our call manager in Austin, and Cisco provides support and ... has an interface to us in our Austin data center.

#### What security do you employ at the facility?

**McGovern:** Biometrics — hand geometry as well as retina scanning — [is used in] a dual-biometric entry in a 'man trap.' Also, we use closed-circuit television systems of the entire interior and exterior of the facility all digital-video

One of Oracle's crown jewels — a state-of-the-art data center in Austin, Texas — recently earned recognition as Data Center of the Year in an award program cosponsored by AFCOM, a group of data center professionals, and Network World. And no wonder. The 3-year-old facility houses

an impressive array of new data center technologies, protected by James Bond-like security systems. The Austin data center, which originated as part of a worldwide effort to consolidate internal IT infrastructure and shave operational expenses, has become the heart of Oracle's On Demand software-as-a-service outsourcing initiative. The data center also supports a variety of internal busing lighting. Signature Series Executive Editor, Julia Port recently

ness applications. Signature Series Executive Editor Julie Bort recently spoke with David Thompson, CIO of global IT (pictured, far left), and Mitchell McGovern, vice president of global data center operations, to discuss the data center.

archived.We also have anti-passback card readers, and the glass is protected by blast-guard window film. The physical perimeter fence is vehicle-proof because it has two feet of concrete and then six feet of wrought iron on top of that. In the interior, we have photoelectric beams, so should someone decide to scale the fence, it sets off alarms for the manned guards that are 24/7 responsive. We quite often do internal penetration tests and test for the responsiveness of guards. We do seven-point employee background checks, and we check packages for bombs with X-rays. And we check all persons coming into the facility.

See Award, page \$25

#### Oracle's data center stats

- The 130,000-square-foot Austin data center hosts the world's largest Network Appliance and Dell/Linux installations under one roof at 12,000 servers and 3 petabytes of storage capacity. Oracle primarily uses two- and four-processor Dell PowerEdge servers running Red Hat Enterprise Linux AS v. 2.1 and 3.
- About 20% of Oracle's total IT population work for or with the Austin data center.
- 25% of the site's power comes from green sources, primarily a wind farm in Texas, earning it designation as an Environmental Protection Agency Green Power Partner and Austin Energy's Green Choice member.
- In its IT overhaul, Oracle merged 40 data centers into this site.
- The site averages 104 watts of electrical output per square foot of the raised floor, with some sections supporting 170 watts per square foot.
- Of the 12,000 servers at the Austin data center, 2,000 are used for Oracle's On Demand services.



#### MCI wins big!

MCI took home top honors in the AFCOM/Network World New Data Center Award competition for Secure Data Center and Data Senter Manager of the Year. For details on these winning envises, visit us online at

www.networkworld.com; DocFinder: 7222

### There May Be a Hole in Your Data Center's Security.



#### Raritan's Dominion® KX. Safe, Secure and Available IT Services.

Holes in Swiss cheese mean the cheese is ripe. Holes in security mean you're the one who's ripe – for problems. Unlike some other KVM providers, Raritan always encrypts all KVM traffic – keyboard, mouse, AND video, providing the most secure solution on the market. And the Dominion Series helps reduce complexity and downtime, while increasing productivity. Which means your incident response and problem resolution times get better. Instead of smelling like bleu cheese.

For your copy of a free White Paper:
"Understanding the Security Implications of Deploying KVM Over IP"
Call 1-800-724-8090 x1428 or visit us at Raritan.com/1428

Command Center

Dominion Series

Paragon II

IP-Reach

The KX Digital KVM Switch is a core building block of Raritan's Complete Data Center Management Solution.

Raritan When you're ready to take control. The

© 2005 Rar tan Computer, Inc. Raritan, Paragon, IP-Reach, Dominion and CommandCenter are trademarks or registered trademarks of Raritan Computer, In

# office balk

Customer preferences, billings, account numbers—in short, everything to get the job done—now available in the comfort of home. In real time. In real terms. Cisco IP Communications brings together voice, video and data to transform homes into call centers, so employees don't have to be at work, to be at work. Learn how Cisco is helping change business at cisco.com/poweredby.



productivity. powered by



#### Award

#### Enterprise honorable mentions

The New Data Center Awards, co-sponsored by AFCOM and Network World, yielded these four notable enterprise data center designs.

#### St. Luke's Health System, Kansas City, Mo.

At St. Luke's Health System, the mission is to become paperless. Under the direction of manager Harold Sirls, the company moved from a mainframe network to a newly built, state-of-the-art data center equipped with a mix of Unix and Windows environments. The data center supports the sharing of hundreds of gigabytes of information daily, including digital imagery, among medical professions across the Midwest. Some highlights of the new design:

- Hosts real-time streaming video for intensive care patient monitoring.
- Features 24/7 network and security monitoring, as well as sophisticated disaster recovery and failover technology.
- Uses open source applications and Windows platforms to enable cross-training of data center IT team.
- Acts as the hub of a 100-mile SONET ring.

#### FreshDirect, Long Island, N.Y.

FreshDirect, an online fresh food manufacturing and delivery services outlet, was spinning its wheels with its legacy architecture of RISC servers. The company had big expansion plans for its e-commerce business, so CTO Myles Trachtenberg spearheaded a complete overhaul of the company's data center. The lynchpin of the new design is the use of open source Egenera blade servers and VMware virtualization software to support Fresh-Direct's Oracle, BEA Systems and Apache e-commerce applications. With Trachtenberg's bold initiative, the company has seen impressive results such as:

- Checkout time for customers reduced from 14 seconds to 1.5 seconds.
- Software upgrades that used to take up to five hours and require a full system shutdown now can be done on-the-fly in less than 30 minutes.
- The company claims \$1.2 million in savings in licensing fees and administration costs.

#### Massachusetts Department of Revenue, Boston

The Massachusetts Department of Revenue recently retooled its online filing and payment system for taxpayers. At the heart of the "WebFile for Business" project is a significant redesign of the agency's data center to support Web services. The DOR has been able to process almost 700,000 tax returns and \$2 billion in payments in the first 10 months of operations. The DOR employed sophisticated security techniques to protect vulnerable Web-based architecture:

- Implemented a security gateway from DataPower to filter XML and Simple Object Access Protocol traffic.
- As a best practice, the DOR added application-level inspection of Web services
- Custom-built an application for centralized monitoring of traffic generated by the SOAP services.

#### PHH Mortgage, Mt. Laurel, N.J.

A provider of private-label retail mortgages, PHH Mortgage depends on its e-infrastructure to drive business. Its high-profile client list, which includes large financial institutions, prevents the company from suffering outages of any type. To attain high availability, the company completely restructured its data center operations, home to its call center and other mission-critical applications. Some highlights of the new design:

- A two-tier approach that features a primary and secondary data center.
- Sophisticated failover architecture that can handle a complete data center failure without an interruption in business.
- Replication of data in real time from mission-critical systems in the primary data center to identical systems in the secondary data center using Windows Server 2003 clustering.
- The two data centers feature redundant heating, cooling and power systems, as well as 24/7 network and facilities monitoring and closed-circuit surveillance.

### MM Cisco **Powered**

when you decide on the service. this logo will help you decide on a provider.

Make sure you get the latest in network services by looking for the Cisco Powered logo. From managed business voice to managed security and virtual private networks, this logo means the service is delivered over a network built end-to-end with Cisco equipment—which meets the highest standards for performance and reliability.

To find a Ciscorecommended service provider or to download the Cisco Guide to Buying Managed Network Services, go to cisco.com/go/cpnnow1.





THE LAST PIECE

# Filing the gap

Tech entrepreneur Bill Coleman discusses the promise of automated application management.

**BY SUSAN SCHAIBLY** 

If the new data center is to become intelligently self-healing and unquestionably reliable, trust-worthy automation technologies had better begin to materialize. Enter start-up Cassatt, which aims to fill in the automation gap with products that perform real-time provisioning of IT resources. Over time, such automation will nudge hardware toward commoditization, which will lower the data center's total cost of ownership, predicts Bill Coleman, CEO of Cassatt, one of Network World's 10 start-ups to watch for 2004 (see www.networkworld.com; DocFinder: 7029). Here Coleman shares his IT automation vision.

### Your marketing materials say that Cassatt's flagship product, Collage, creates a virtual pool of servers. How is this different from what server virtualization vendors, such as VMware, do?

Collage is automating IT operations. We happen to use, as one aspect, the ability to virtualize how the application and data are profiled across the network. That is different from what VMware or [Microsoft] Virtual Server or XenWorks do. We can provide run-time automation to any application running on any system, including a virtual machine such as VMware. The other thing is if a specific server fails, VMware might not actually know that it is running on several physical servers simultaneously. But we can automate its deployment, and we can automate its failover. We can automate its scalability. We can automate attachment management and version management — on the fly.

### How does your technology differ from grid computing, where CPUs can be used across servers as if they were a single pool?

Grid computing, virtualization and utility computing are all way overloaded terms whose definitions are not detailed enough to say what they actually are. Our focus is limited to one thing only: optimizing how we profile what you're doing with your applications and data based on the physical resources available. You can call that a grid. You could actually, at some point [when you figure out how to measure and meter the capacity you're selling and bill it], call it a utility.

As we get closer and closer to a world in which you can consider the hardware components separately fungible, then we will have the reality. Something like us has to sit there and not require any changes to the software and not require any changes to the hardware but dynamically be able to reconfigure how the software and data is profiling and using the physical world.

#### Does this type of on-demand automation ease business continuity and disaster-recovery processes? If so, in what ways?

We virtualize the connection between the physical world and the logical world. There is something that is needed beyond provisioning, beyond virtual machines, beyond system management to, in run-time, be able to [adjust to changing conditions] without people having to physically take down servers and rebuild them and put another server up. We don't care what breaks in the

hardware. We're not trying to manage the hardware. All we're trying to do is take a set of policies — and those policies can be utilization, they can be failure, they can be time of month — and change how we're re-profiling the application data flow to maximize it. Automating run-time operations means a failover site or business continuity is a byproduct — it just happens.

### What are your thoughts about the direction of IT generally? When IT reaches the Holy Grail of the fully automated data center running on inexpensive hardware, then what?

What we're going through is the commoditization of computing, both on the hardware side [call it grid, call it whatever] and also on the application

side. It's going to take a while, but the role of IT automation is to enable it. We're going to get to a point very quickly in which if we don't automate at least a part of IT operations, we will not be able to manage the scale. Without IT automation, at some level, it won't happen. This is the fundamental missing piece in the distributed computing paradigm today.

Once we enable IT automation on commodity computing, we dramatically drive down the hardware cost and the operation and maintenance costs. It's going to take several years, but as that happens, it will accelerate outsourcing of the running of the back end of the utility by every corporation in the world because it not only drives down the capital expenditure cost, but it also drives down the operating expenditure cost.

There will no longer be, 10 years from now, high-priced switches, high-priced storage and high-priced servers. They will be so commoditized that companies that are in those businesses today will have to find ways to increase their value proposition — and they will; IBM has done it before. IT automation will take the economics out of the outsourcing industry as we know it today, given the focus on backend operations at very high cost. But it will also disintegrate the application stacks that we know, so it will change the software world. Once that happens — and we're talking about 10 years from now — then the economics of everybody that uses computers will be affected.... We are finally moving toward a model of computing in which it isn't about the technology, it's about the information and the business model.

Schaibly is a freelance writer in Fort Collins, Colo. She can be reached at sschaibly@aol.com.



#### Turn Control Freaks Into Remote Control Freaks.

Kick back. Relax. Make yourself comfy. It's all part of a day's work when you're in total control with our DSView® 3 management software.\* Now you can remotely control servers, serial devices and power devices from a single browser interface. Reboot

servers down the hall or around the world. With virtual media, you can even remotely load software without setting foot in the data center. Those hours spent at the rack are over. Visit us at www.avocent.com/stayincontrol. And start looking for a new chair.



<sup>\*</sup> Recliner recommended, but not included.



WE HAVE ANSWERS.



#### Free White Paper!

To receive a FREE backup, recovery and archive white paper visit us at www.quantum.com/helpme and enter code ADV138.

At Quantum it's our job to help make tape work for you again.

Restoring your data at tape speed isn't always an option. That's why Quantum offers you a disk-based backup solution that emulates a tape library, for seamless integration into your existing backup environment. So you get the best of both worlds - restore speeds up to 10 times faster while preserving your tape backup processes and investments.

Quantum

At Quantum we're in the business of making tape work. Backup, recovery and archive. It's what we do. For the answers on how Quantum can make tape work for you, call 1-866-827-1500 or visit us at www.quantum.com/helpme.

BACKUP RECOVERY ARCHIVE. IT'S WHAT WE DO!"

WIRELESS III REGULATORY AFFAIRS III CARRIER INFRASTRUCTURE DEVELOPMENTS

### Vonage readies first business service

#### BY DENISE PAPPALARDO

Those familiar with Vonage and its unlimited \$25-per-month VoIP service for consumers might want to know that the service provider is readying an offer for

Vonage is quietly testing its Business

- Network vendor ECI Telecom last week announced that it is acquiring edge router maker Laurei Networks for \$88 million. The acquisition will add edge routing and IP service capabilities to ECI's broadband, optical and core routing portfolio. Chiaro Networks provides ECI's core router under a resale arrangement. Founded in 1999 and based in Pittsburgh, Laurel has received \$118 million in venture funding and has 150 employees. Laurel began selling its edge routers in 2002 and almost doubled its sales in 2003 and then in 2004, ECI says. Sales for the past 12 months that ended April 30 totaled \$18 million. Customers include Level(3), Korea Telecom and Dacom. The transaction is expected to close in a few weeks. Laurel then will become ECI's Data Networking Division.
- **Qwest** last week announced a \$20 million contract to provide network services to the U.S. Department of Housing and Urban Development. Qwest's IP-based iQ Networking services will transfer data between nearly 100 HUD field locations and six regional offices. Qwest will provide these services as a subcontractor to Lockheed Martin under HUD's Information Technology Services contract. Under an initial five-month \$1.1 million contract, there are nine additional one-year options that could be worth more than \$19 million, Qwest says. The contract includes access to Qwest's Multi-protocol Label Switching-based private IP network. The deal is in addition to Qwest's current contracts with HUD.

Plus service with a few customers in the U.S.The service could save customers 35% over traditional telephone deals, according to the company. This will be Vonage's offering for customers who need more than two voice lines.

The service provider is bundling a set number of lines and minutes for a flat monthly fee (see graphic). To support multiple VoIP lines, Vonage certified a handful of devices from AudioCodes, Cisco, Epygi Technologies and Quintum Technologies.

"Through word of mouth [small office/ home office] users wanted to bring Vonage into their business," says Mark Lyons, vice president of value-added reseller (VAR) sales at the service provider. To ready a service, Vonage first identified VolP products that could support two to 100 employees, he says. And then the service provider teamed with VARs.

"We signed up about 100 resellers in eight months," Lyons says. He says the pilot has been going well with 500 Business Plus lines in service.

While Lyons says Vonage will sell its Business Plus service on Vonage's Web site when the offering is officially available in the late third or early fourth quarter, VARs will do most of the selling. Lyons says

that's because Vonage does not want to be in the business of selling VolP equipment.

"This is a pretty good market for [Vonage] to go after," says Irwin Lazar, senior analyst at Gartner. "Vonage's biggest challenge in breaking into the business services market will be competing with other telcos."

Lazar says established players such as Verizon and the other incumbent local exchange carriers offer a variety of VolP services for small and midsize business (SMB) customers. Vonage will face considerable competition, even at the low end of the market, he says.

Some of these VolP services are becoming more sophisticated, such as Verizon's recently announced lobi Enterprise service, which brings VolP-like unified voice and data communications to traditional Centrex customers, he says.

Also, some customer might prefer companies such as Volo Communications and DSL.net, which bundle broadband and VolP services. Vonage does not offer users broadband connectivity, just the VolP service that runs over that bandwidth. Lazar says some users will prefer a service provider that's responsible for both.

Despite the crowded market, Lazar says

#### Vonage offerings

**Business Plus VolP service plans** for small and midsize companies.

Number of lines	Number of minutes	Monthly price
8	12,000	\$300
16	25,000	\$600
24	50,000	\$1,000

the smaller business user is the ideal market for Vonage to address.

Although Vonage is venturing into business services, the service provider says it is not planning enterprise-level offerings.

"We have no plan right now to go after bigger users," Lyons says. "We are going from residential to SOHO and into SMBs. It's very easy to deploy even the SMB products where not a lot of resources are needed. When you get to larger enterprises, every deal is custom and they need heavy hand-holding. And that's not what we're looking to do."

While Vonage will compete with AT&T and MCl with its Business Plus service, neither provider is aggressively going after the lower end of the SMB market.

### Verizon Wireless revamps pricing

#### **BY JIM DUFFY**

Verizon Wireless last week announced new data pricing for enterprise customers, and software to push wireless e-mail to work groups and large organizations.

The data pricing is available to enterprise customers of Verizon Wireless' National-Access and BroadbandAccess services. National Access lets customers access the Internet, intranet, e-mail, attachments and business applications from their laptops at average speeds of 60K to 80K bit/sec, and bursts of up to 144K bit/sec.

BroadbandAccess is Verizon Wireless' premier EV-DO-based data service, offering customers average speeds of 400K to 700K bit/sec, capable of bursts up to 2M bit/sec.

Unlimited use of National Access now costs \$60 for monthly access, a savings of \$20 a month, while unlimited use of BroadbandAccess remains \$80 per month. Customers who travel outside a BroadbandAccess coverage area with an EV-DO

#### **Price changes**

New enterprise pricing for Verizon Wireless data services include:

Service	Old price	New price
National Access	\$80/month	\$60/month
Broadband Access	5M bytes/\$30	10M bytes/\$30
Data added to America's Choice plan	N/A	Discount of \$5

device can switch to National Access network coverage.

Verizon Wireless also is introducing BlackBerry and PDA/smart phone data service plans for customers with handheld devices. Customers purchasing any Verizon Wireless BlackBerry or PDA/smart phone can get data plans that include 10M bytes for \$30 or unlimited data service for \$50.

This is double the previous offer of 5M bytes for \$30.

Customers adding data plans to any America's Choice voice plan of \$40 or higher will receive a \$5 discount on their chosen data plan.

The software services, provided by Intellisync, are called Wireless Sync Work Group and Wireless Sync Enterprise Server. Wireless Sync Work Group pushes Microsoft Exchange and Lotus Domino groupware-based e-mail, calendars, contacts and tasks to up to 20 users of Treo, Pocket PC or smart phone devices.

Wireless Sync Enterprise Server can scale to support thousands of users, Verizon Wireless says. It provides secure mobile data delivery for e-mail, calendar, contacts, tasks and other enterprise data to Verizon Wireless smart phones and PDAs. Wireless Sync Enterprise Server also lets companies secure mobile devices and disable lost or stolen devices over the air.



5/23/05

've written a fair amount lately on the topic of "information stewardship." In case you've missed it, information stewardship is the discipline of ensuring that an organization's data is:

- As accurate and complete as possible (data-quality management).
- Appropriately secured, with access granted only to appropriate parties (information protection).
- Auditable and compliant with pertinent privacy and disclosure guidelines (indexing and records retention).
- Stored on the most appropriate and effective mechanisms (information lifecycle management).
- Reliably backed up and available in the event of a failure (business-continuity planning and disaster recovery).

So far, I'm finding that few organizations have a consistent, coherent framework

### The cost of mismanaging information

covering all these points — much less the technology and processes to manage it. Moreover, most of the companies tell me that information stewardship (though they usually don't call it that) is the singlemost critical strategic challenge they're

l agree. While it's hard to pin hard-dollar numbers on the cost of an ineffective information-stewardship policy, several recent events highlight the urgency. Recently, Time Warner announced that it lost sensitive data, including names and Social Security numbers, for 600,000 employees. Time Warner's data was on back-up tapes maintained by storage facility provider Iron Mountain and was apparently lost in transit to the storage facility. In February, Bank of America lost back-up tapes containing credit-card records for more than 1 million government employees, and ChoicePoint was attacked by identity thieves who gained access to sensitive customer data.

That's not all. Famed investment bank Morgan Stanley was recently ordered to pay a whopping \$604 million in a legal suit, primarily because the company said

The bottom line is that companies need to move now to create and adhere to effective information-stewardship policies.

it was unable to find e-mails pertaining to the case. (Effective records retention and indexing is a key component of information stewardship.) And a recent study by Financial Executives International found the average cost of Sarbanes-Oxley compliance to be \$4.4 million, using a base of 217 companies with average revenues of \$5 billion.

The bottom line is that companies need to move now to create and adhere to effective information-stewardship policies. Start an information stewardship task force today, and include participants from

within corporate finance, legal and compliance teams, as well as IT.

But that's not enough. Our entire legal framework needs to be revamped and rethought in the context of information stewardship. Recent court cases have reached contradictory conclusions about which information can be considered private, or what legal hurdles are required to disclose it. As noted cryptographer and security guru Bruce Schneier says in this month's Communications of the ACM, "In the information age, virtual privacy and physical privacy don't have the same boundaries. We should be able to control our own data, regardless of where it's stored."

Amen.

Step 1 is for organizations to tackle the problem within their own boundaries. Step 2 is to rethink the broader public policy on information stewardship in the context of 21st century technology.

Johnson is president and chief research officer at Nemertes Research, an independent technology research firm. She can be reached at johna@nemertes.com.



#### Beyond Scan and Remove - Think Spyware Prevention

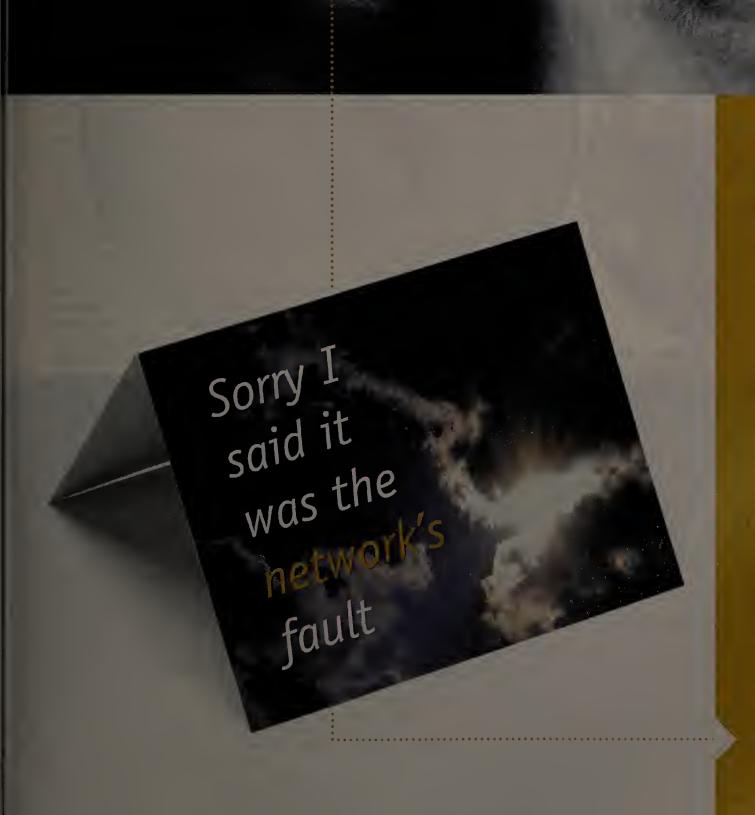
Are Spyware and other Internet threats clowning around on your network? SurfControl Enterprise Threat Shield gives you the last laugh. If the threat is already on a user's machine, SurfControl Enterprise Threat Shield stops it from running and removes it. What is more, SurfControl Enterprise Threat Shield prevents reinfection, is enterprise-ready, gives you centralized management, and is user tamper-proof. Put the kabosh on spyware, key-loggers, instant messaging, P2P and games before they jeopardize security or productivity.

FREE 30-day trial www.surfcontrol.com/go/threatshield or call: 1.800.368.3366





## With a Fluke Networks' portable analyzer, expect to be seeing more of these.



NETWORKSUPERVISION\*\*



EtherScope and OptiView – Two Portable Network
Analyzers created to help prove it's not a network
problem. Faster. Quickly proving problems are not
network problems is exactly what our portable
analyzers are all about. Unlike a protocol analyzer
or laptop freeware, they give you the complete vision
you need to quickly and accurately diagnose problems.
For example, you can track down connectivity
problems and incorrectly configured stations, identify
causes of network slowdowns (like excessive broadcasts) and spot bandwidth hungry applications.
All with one tool: a Fluke Networks' portable analyzer.
Simply put, they're the best way to prove it's not the
network's fault. And the surest way to start getting a
little more respect around the office.

Prove it's not the network's fault. Faster.
Visit www.flukenetworks.com/PNA to see
how one of our portable analyzers can make
your job easier.

FLUKE

92005 Fluke Corporation, All rights reserved, 01884



Introducing the Belden IBDN™
System 10GX. Clearly the most innovative UTP structured cabling solution in the marketplace.

Sometimes you have to take a big leap in your thinking to get to something that's truly new — and truly great. That's what we've done with our 10GX Solution.

Our 10GX Solution isn't an improved or boosted Category 6 system, but a revolutionary new system designed around a series of dynamic enabling technologies that deliver on the two most critical factors in 10 Gigabit service: reduction of Alien Crosstalk and controlled performance up to a minimum of 500 MHz.

To accomplish Beyond 10G<sup>™</sup> performance, we've developed four totally new enabling technologies — technologies that allow the Belden IBDN System 10GX to deliver guaranteed performance up to 625 MHz.

- SpiralFleX<sup>™</sup> Cable technology that increases randomization and greatly improves Alien Crosstalk performance
- MatriX IDC™ Module technology which eliminates the issue of Alien Crosstalk between modules, offering performance 30 times better than Cat 6
- FlexPoint PCB Module technology that positions the compensation circuitry directly at the plug's point of contact, offering unbeatable mated-connection performance
- X-Bar™ Module termination technology that assures accurate module/cable termination and reduces installation differences

10GX is truly the most advanced 10G system in the marketplace — in fact, every other system is just treading water.

For more information, please call Belden CDT Networking at 1-800-262-9334.

www.BeldenlBDN.com



DuPont<sup>™</sup> certified limited combustible cable



2005, Belden CDT, Inc.

# pdate An inside look at technologies and standards

### Fuel cells fire up handhelds

#### **BY JUAN BECERRA**

High-performance handheld electronic devices such as smart phones, video/music players, multi-functional PDAs and RFID tag readers require longer usage times than power sources currently provide. Traditional battery technologies are not keeping pace with these demands.

Direct methanol fuel cells (DMFC) offer several advantages over lithium-ion batteries. Methanol, otherwise known as methyl alcohol or wood alcohol, is a colorless liquid commonly used in antifreeze for windshield washer fluid. It is lighter than water and weighs far less than a lithium-ion, making it a better option for portable electronics. A DMFC provides longer usage between charges, increasing run time between charges by two to 10 times over the status quo of current battery technologies. And when a charge is needed, a DMFC fuel refill can be easily swapped into place without interruption of power.

Moreover, methanol is inexpensive and widely available. A gallon of methanol, enough to power a cell phone for about 10 years, costs only \$10. A DMFC converts chemical energy into electricity via oxida-

#### Got great ideas

Metwork World is looking for great ideas for future Tech Updates. If you want to contribute a primer on a specific technology, standard or protocol, contact Amy Schurr, senior managing editor, features (aschurr@nww.com).

tion of methanol.

Fuel-cell power packs include a fuel refill, methanol-feed subsystem, fuel cell and electronics circuits. The feed in a methanol-powered option might include a valve, pump, pipes, filters or orifices on a very small scale, much like one would find in a desktop inkjet print head.

Traditional DMFC systems, also known as active systems, include a condenser, fans, pumps and fluid-mixing circuits to dilute the methanol as it is fed to the anode side of the fuel cell. The fuel cell is akin to a chemical sandwich with layers of catalysts and membranes between an anode and a cathode layer.

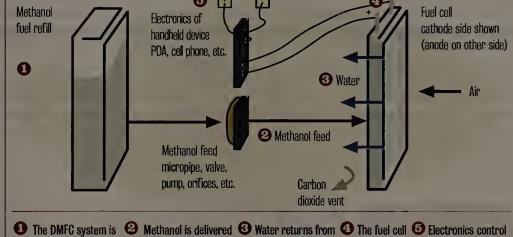
A more simplified approach is offered by what is called passive DMFC technology. When methanol is introduced into the cathode (entry) site of the DMFC, a chemical reaction occurs and the byproducts are CO2 and water. In a passive DMFC, the water required for the process on the methanol side is transferred internally within the fuel cell from the site of water generation on the air-side of the cell. This internal flow of water takes place without the need for any pumps, complicated recirculation loops or other plumbing.

A passive design requires the DMFC platform to manage water in a way that obviates the need for condensing the vapor from the cathode exhaust, then storing and mixing it with methanol to maintain an accurate concentration of methanol and water at the anode.

A small battery is often added to the DMFC system to serve peak demands of the device. This hybrid approach lets the DMFC operate at its optimal level that keeps pace with the continuous power of the device.

#### **Direct methanol fuel cell**

A DMFC converts chemical energy into electricity via oxidization of methanol. It weighs less than a typical lithium-ion battery and offers longer usage times, making it a viable alternative for powering handheld electronics such as smart phones, PDAs and RFID tag readers.



1 The DMFC system is refilled with methanol.

**HOW IT WORKS** 

Methanol is delivered to the fuel cell.

Water returns from the cathode (air) side to the anode

The passive design leads to fewer components and a smaller DMFC power pack that could fit onto the back of a PDA or cell phone. Because components might require power to operate, having fewer components yields longer usage time.

And having fewer components leaves more space for methanol. Every cubic centimeter of space for methanol means another 2 to 3 hours of usage while the fuel cell provides 0.5 watt of power on average to a device. By comparison, one cubic centimeter's worth of typical battery allows

about 30 to 60 minutes of usage time.

Finally, with a better power pack and a spare fuel refill or two, there are no more AC cubes to pack and carry, no more international adapters to pack and carry, no more car chargers, no more searching for an electrical outlet and no more waiting for a charge.

Becerra is vice president of strategic planning and alliances at MTI MicroFuel Cells. He can be reached at juan. becerra@mechtech.com.

#### Ask Dr. Internet By Steve Blass

#### What is a portlet?

A portlet is a Java Web component that processes requests and generates dynamic content. Portlets run inside portals and are managed by a portlet container similar to the way Web services are managed by Web containers in the Java world. Java Specification Request (JSR) 168 defines a set of APIs for portlets and addresses standardization for preferences, user informa-

tion, portlet requests and responses, deployment packaging, and security. This lets the same portlet deliver services through any standards-compliant portal installation. Oracle and others offer commercial portal servers that support the portlet specification, and there are a number of open source portal servers available. The portlets group on Yahoo (www.networkworld.com, DocFinder: 7234) is quite active and you can find open source portlet examples at the Portlet

Open Source Trading site on sourceforge (DocFinder: 7235), which is sponsored by Plumtree, Documentum BEA and Sun. JBoss provides a complete JSR 168-compliant portal server bundle with a collection of sample portlets for download at DocFinder: 7236.

Blass is a network architect at Change@Work in Houston. He can be reached at dr.internet@changeatwork.com.

GEARHEAD INSIDE THE NETWORK MACHINE Mark

Gibbs



irst up this week: The Red Screen of Death. "Hold hard!" we hear you mutter, "surely you mean the Blue Screen of Death?" Nope, red it is, at least currently where Longhorn is concerned.

In his blog (www.networkworld.com, DocFinder: 7227), Michael Kaplan, a "Technical Lead from Globalization Infrastructure, Fonts, and Tools at Microsoft," notes that he was messing around with a Longhorn beta and after doing something evil to the registry and booting under Virtual PC, he got the fabulously ungrammatical and totally unhelpful message, "Info: An error occurred transferring execution" (yes, it really was spelled that way) on a screen with a red background!

Kaplan notes, "I am not sure I would class the change as an improvement." Never was a truer word spoken. We hope that Mr. Kaplan is flying beneath the executive radar at Microsoft, otherwise he may well be going down in flames.

### The RSOD and challenging responses

According to Microsoft droids, this display will not be included in the release version of Longhorn, but as reader Jack Miller, who brought this amusing diversion to our attention, points out: "Early versions of DOS had better error messages ... but it seems Microsoft is going the wrong way.l can only conclude this is a planned journey to make users more dependent on Microsoft and increase their stronghold on the market.... That's why I'm rooting for Linux."

But that isn't all readers have been writing in about. Morely Dotes was the first to write in after our recent brief discussion of an anti-spam product called Qurb (see DocFinder: 7228).

Dotes, which is not his real name for reasons that are unlikely to be cleared up here, disagrees with the challenge/response methodology Qurb uses: "I don't suppose it ever crossed your mind that [challenge/response] systems reduce \*your\* spam problem by offloading it onto unwilling strangers, did it? People who use [challenge/response] systems are, inevitably spammers themselves."

What Morely means is that challenging a message from a spammer who uses a false address will result in the challenge request going to an innocent bystander, the real owner of the abused address.

Dotes, who runs an e-mail hosting company, feels that such an irritation should not be allowed to go unpunished: "As an e-mail admin, I have a two-pronged response to challenges sent to my users: 1) I reply to the challenge, so that future spam using the same forged 'from' address will be delivered to the lazy sod who demands that my users sort his spam for him.2) I block the IP address of the sender permanently at the firewall, so that future contact from that lazy sod is turned away by the Border Patrol"

Dotes finished "...since you ... have a track record of admiring 'solutions' to the spam problem that only make it worse, I'm having this e-mail archived for the public record." There Mr. Dotes, we did the public record thing for you.

Of course, Dotes wasn't the only person to write in arguing against challenge/response systems. Check out the Gibbs forum (DocFinder: 7229) for a well-argued letter on the topic.

We raised these issues with the chaps at Qurb and they pointed out that the number of challenges from challenge/response systems will be trivial compared with the number of bounces that the owners of forged return addresses receive.

The problems with challenge/response systems raise some interesting questions. First, even when the incoming mail is filtered so that obvious spam is removed and obviously incorrect challenges are not sent, is the use of challenge/response ethical and/or reasonable? We think it is both, but we'd like your thoughts.

Second, do we need a standard for challenge/response so that its use would be generally acceptable? This is easy: If the standard challenge was to include an X-header (for example, "X-Challenge:") followed by the original message ID, then when a challenge recipient gets a challenge with an ID he didn't create, he would just delete it sight unseen. *Voilà!* A small increase in Internet traffic, a large increase in the value of e-mail.

Third, and specifically with respect to Dotes' behavior regarding challenges: Is Dotes' way of dealing with challenges commonplace and is it ethical? We suspect that it just exacerbates the overall spam problem without extracting any reasonable or effective justice.

Cry "Havoc!" and let loose the dogs of code at gearhead@gibbs.com. And, ahem, there's always Gearblog (www.network world.com/weblogs/gearblog).



**COO**Quick takes
on high-tech toys
By Keith Shaw

After a few weeks of craziness and travel, we finally got some time to try out some new gizmos. Here are two devices that have had an honored space on our desk.

The scoop: ThinkPad X41 notebook, starting at \$2,000, from IBM

What it does: The latest notebook from IBM is an ultra-portable model that weighs a scant 2.7 pounds. The unique feature of the X41 is the inclusion of a fingerprint scanner and security software to prevent unauthorized users from accessing the system, as well as an easy way to remember all your passwords —

IBM's ThinkPad X41 notebook gives you just what you need in a lightweight package.

they're all accessed with a swipe of a finger. Other features include a 12.1-XGA display Intel Pentium M processors, the new Intel 915GM Express chipset, Secure Digital card reader and two USB 2.0 ports.

Why it's cool: Our love affair with bulky notebooks that have a million features is over, and we're back in love with

the ultra-portable that still gives us everything we need but in a form that won't break our back when we travel. About the only thing we couldn't do with the X41 was watch a DVD, but you can always get the optional dock in order to add the optical drive. The integrated wireless LAN connectivity worked fine, and the included software let us find hot spots quickly and easily.

IBM does an outstanding job of adding features that

business users (and their IT support group) want. It's no different with the fingerprint scanner and

software — it was easy for us to enroll our fingerprints and choose different security settings and options. After our enrollment we only messed up once when we tried to log on, mostly because our finger was off-center and we did a fast scan.

The built-in SD card reader was a nice bonus — we could quickly take the card out of our digital camera and upload photos without using a separate card reader or camera cable.

Grade: ★★★★ (out of five)

The scoop: MFM-HT75W widescreen TV/LCD monitor, about \$800, from Sony.

What it does: This 17-inch widescreen display combines a TV tuner with an LCD monitor that lets users connect almost any type of video source to it. The HT75W has a



1,280-by-768-pixel widescreen display that supports Sony's XBrite technology to provide 450 nits of brightness and offer a 16-millisec video response time. The monitor also is high-definition TV-ready, supporting the 1080i and 720p HD technologies. It includes several

The MFM-HT75W provides multiple video sources on one display.

video inputs for video sources (component, S-video and composite), as well as a choice between analog and digital video input (DVI-D) for a computer. Once you have installed multiple video sources, the display offers a picture-in-picture feature so you can watch two different video sources at the same time.

Why it's cool: The ability to provide multiple video sources on one display let us connect a computer, video game console and cable TV feed to the same monitor, and we still had room to connect a DVD player or a high-definition cable converter (via the component inputs).

If you're tight on space in an office, dorm room or other location, having the convergence of these technologies is a must. The sleek design also impressed us — the bottom part of the display curves out, and it has a picture-frame-style arm in the back for size adjustments and provides better balance. The display also won style points for having a simple remote control that let us switch between video sources without button mashing.

Grade: ★★★★★

Shaw can be reached at kshaw@nww.com.



#### The blade made for Linux. The tools to make it better.

Put a world leader in blades and Linux to work for you. More and more businesses are finding that HP BladeSystem servers are the tool their data center needs. One reason is that HP's blades are optimized for Linux. Not only do they ship with powerful software tools, like HP Systems Insight Manager™ and ProLiant Essentials, they also run key Linux apps from software partners like PeopleSoft and Oracle. And with powerful AMD Opteron™ Processors, you get maximum performance now as well as the flexibility to transition to 64-bit computing now or in the future. In short, HP offers you the advantages of blades, Linux and legendary HP reliability all in one neat, affordable package. Get more support, technology and advice from HP. So you can build the I.T. you need.



HP ProLiant BL25p Blade Server



HP ProLiant BL35p Blade Server

#### THE SOLUTIONS

- BL25p: 2 AMD Opteron™ Processors Model 200 (up to 2.60GHz)
- BL35p: 2 AMD Opteron™ Processors Model 200 (2.40GHz)
- \* BL25p: Up to 48 servers per rock
- BL35p: Up to 96 servers per rack
- \* HP Systems Insight Monoger™ for Web-bosed networked monogement through a single console
- Ropid Deployment Pock for eose of deployment ond orgaing provisioning and reprovisioning in Linux-mixed OS environments (optional)

#### THE BENEFITS

- Up to 23% sovings on acquisition cost
- Up to 23% less power consumption
- Up to 93% fewer cobles
- 43% less space needed for some number of processors
- Hot-swoppoble server design
- Single interface for local and remote management of servers, storage, software and networking

Enhance your system, HP STORAGEWORKS MSA1500CS



– Up to 24TB of copacity (96 250GB SATA drives) – Up to 16TB of copocity (300GB SCSI drives) – Ability to mix SCSI and Serial ATA enclosures for greater flexibility – 2GB/1GB Fibre connections to host flexibility

Save up to \$844 on the 4-hour response, 24-hour-a-day, 3-year warranty upgrade<sup>2</sup>



Save \$1,744 when you purchase an HP BladeSystem enclosure and 8 BladeSystem Management Suite Licenses.3

CALL

1-866-625-3909

CLICK

www.hp.com/go/bladesmag52

CONTACT

your local reseller



1. Based on internal HP testing; compared to similarly configured HP1U, 2P server with SAN connectivity. For configurator, please visit: http://h30099.www3.hp.com/configurator/catalog-issipc.asp. 2. Offer valid through 7/31/05 on purchase of four-hour response, 24-hour-a-day, three-year warranty upgrade for MSA 1000 or MSA 1500 products. 3. Offer valid through 8/31/05 on purchase of HP BladeSystem enclosure and eight BladeSystem Management Suite licenses. Offers valid in U.S. only. Offers cannot be combined with any other offer or discount and are good while supplies last. See Web site for full details. Linux is a U.S. registered trademark of Linux Torvalds. Oracle is a registered U.S. trademark of Oracle Corporation, Redwood City, California. AMD, the AMD Arrow Logo, AMD Opteron and combinations thereof are trademarks of Advanced Micro Devices, Inc. ©2005 Hewlett-Packard Development Company, i.P.



**ON TECHNOLOGY** John Gallant

## Another angle on the Cisco/ Juniper battle

t Interop, the show floor was abuzz with talk about the growing battle between Cisco and Juniper for the hearts and minds of enterprise customers.

In speeches by their CEOs, and in much of the analysis offered by pundits, the Cisco-Juniper tilt was described as a contest between their one-stop-shopping and bestof-breed approaches. Cisco is vulnerable to market share losses from hot products, particularly in highgrowth segments, so its message is all about the value of end-to-end integration. Juniper can't match Cisco's portfolio, so it emphasizes the robustness of its point solutions.

But, in an interesting take, EzeCastle Research says the real battle will focus on how well the companies support the onslaught of Web services applications.

"Web services is where networks and applications converge," EzeCastle writes. "Cisco has been positioning itself as an element in Web services solutions for some time, but primarily as a suitable network platform, rather than an active participant. [But at a recent] analyst event, [CEO John] Chambers commented that future networks would 'switch messages,' the term used in Web services, and a Cisco engineering [vice president] commented that the network could offload Web services handling from servers.

"Juniper's use of the term 'Infranet' in connection with its recent application access control and security announcement [the Enterprise Infranet] seems to indicate Juniper will be adopting Web services in its enterprise products, as well.

"We think this is the real collision point between the two companies. To get to a higher level of strategic engagement with customers...Cisco needs Web services as a bridge between IT and networking. To hop to the next area of strategic importance, Juniper needs to hop to Web services. The firms are on a collision course in the area of Web services support on the network."

EzeCastle lists a number of products that become critical in this battle and predicts a slew of announcements or acquisitions by Cisco and Juniper related to those segments in 2005 and 2006.

When we launched our ongoing New Data Center reporting initiative last year, we committed to helping you understand how services-oriented applications would change the network landscape and the plans of your strategic vendors. Cisco and Juniper aren't the only companies that will morph their strategies to address this sea change in applications, but their fight will be one of the most fascinating and illuminating.

> — John Gallant Editorial director jgallant@nww.com

## opinions

#### **Broadband thoughts**

Regarding Johna Till Johnson's column, "Why do we need a national broadband policy?" (www.networkworld.com, DocFinder: 7225): My company sells broadband over power line equipment. Unlike a lot of companies, we also sell other wired and wireless technologies on the premise that it is better to have the options to find a solution for the customer's problem than it is to try to fit the customer's problem into your solution.

Sometimes the industry loses sight of the fact that there still are many people who are perfectly content with Windows 95 and a dial-up connection, or have no interest in the Internet at all. In most cases, the best thing government can do is encourage progress but let the marketplace take care of itself. If there's enough demand for somebody to make a buck, somebody will provide the service.

> Jerry Brittain Salem, Va.

I agree with the basic premise of Johna Till Johnson's column on broadband deployment and uptake in the U.S.I would like to point out one area that remains unaddressed: Broadband access in less dense areas, which can be surprisingly close to metropolitan areas. I'm more than willing to pay for broadband, but I live in a rural area about 12 miles south of Madison, Wis., a very dense metropolitan area with at least two broadband options available. Even in the village closest to me, Charter, Verizon and SBC have only equipped the densest areas with broadband; the rest of us are left out or forced to contemplate satellite, which appears not only too expensive, but poorly performing, as well.

So while I agree with Johnson's premise, there is definitely a large part of the U.S. that will likely not be

E-mail letters to jdix@nww.com or send them to John Dix, editor in chief, Network World, 118 Turnpike Road, Southborough, MA 01772. Please include phone number and address for verification.

covered with broadband without some sort of incentive, although I'm still pinning my hopes on WiMAX or possibly WildBlue.

Mark Porter Network manager **CUNA Mutual Group** Madison, Wis.

#### Tiger tale

Regarding Dave Kearns' column, "Apple: Predator or protagonist?" (DocFinder: 7226): The problem with basing a review of Tiger on the San Jose Mercury News story is that the newspaper doesn't get down to the nitty-gritty of why Tiger's features are innovative. For example, with Spotlight, files are indexed as they're being written, so you never have to wait for an indexing process because as soon as a file has been written, the operating system knows about it.

And Apple's had the ability to "fetch... up-to-theminute stock, weather and flight information" since before 2000 via its Sherlock search tool. What makes Dashboard innovative is that it's available all the time, at the touch of a function key — there's no waiting for it to boot.

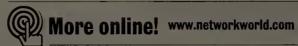
These are just a couple of examples. If you dig into it a little, you'll find a lot of innovative features in Mac OS X 10.4.

> Krishen Greenwell Sarasota, Fla.

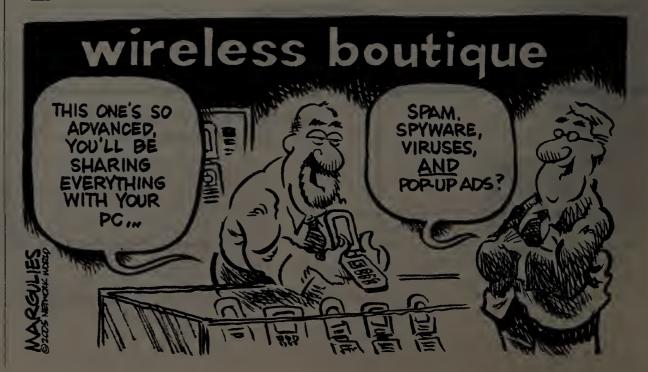
At this time Apple is immune from antitrust consideration, which typically kicks in at about 70% market share. Hopefully Apple will achieve that kind of market share in a few years.

The reason Tiger is big news, simply put, is that it is a Unix-based, secure, ease-to-use, quality piece of work. None of these words describe Windows XP, or will describe, I presume, "Longshot."

> Thomas Barta Durham, N.C.



Find out what readers are saying about these and other topics. DocFinder: 7224



#### **ENTERPRISE APPLICATIONS**

Sandra Gittlen

resence-aware. That's the term collaboration software makers are using to describe all the goodies they are putting in their programs, including instant messaging, Web and audioconferencing, and IP telephony.

Vendors such as Microsoft, IBM/Lotus and Novell are rushing to make not only their traditional collaboration tools presence-aware, but also their productivity tools. For instance, Microsoft is integrating its Live Communications Server 2005 features with Outlook, Word and other applications. IBM/Lotus is doing the same with its Domino and Notes suites.

The goal is to let users instantly communicate with each other without having to leave their core applications. For instance, call center operators can stay within a CRM application and still locate an expert to answer a question for them via IM. Users can call a colleague via IP telephony to discuss edits to a shared document.

This is great innovation, but IT organizations need to be prepared for all that comes with instant communication. They need to educate users on the appropriate use of these tools and help their companies understand infrastructure and resource needs, as well as set policies.

Some things to consider: What are the ramifications for bandwidth, especially when you tie in instant Web videoconferencing and IP telephony calls? Do you have the budget for software licenses and gear to outfit the whole company? How will all this communication be monitored for compliance and auditing purposes? Do you have adequate enterprise storage silos and filtering tools to handle real-

#### The art of collaboration

time transcripts? If they are to be used for business, then they are held to the same standards of record-keeping as e-mail and other types of business communications.

Before IT groups jump headfirst into the world of presence-aware, they should have a heart-to-heart with business units throughout the organization. Figure out who would benefit from the applications vs. who would be distracted by them. Does data entry need IM capabilities or would that slow them down? Will the salesforce need 24-hour help desk availability to remotely use the tools?

Also, consider the security risks involved in instant communications. You might need to install tools that encrypt messages end to end. If you are in a highly regulated industry, you'll also want to employ software that monitors chat sessions and sends out alerts when something is amiss. Establish policies ahead of time to determine when intellectual property is being compromised and how these policies will be reinforced.

You also need to set up benchmarks to review how the tools are being used. This will prove whether they are boosting or draining productivity. Tweaks to policies and usage will need to be made along the way — it's not an install-once-and-leave-it-alone network.

While software companies would like you to believe that collaboration is for everyone, your company must think long and hard about parameters for these tools. Otherwise, you might create a bigger headache than you bargained for.

Gittlen is a freelance technology editor in Northborough, Mass. She can be reached at sgittlen@charter.net.

The goal is to let users instantly communicate with each other without having to leave their core applications.



**ON SECURITY** 

Winn Schwartau

his is my first column written on a Mac - ever. Maybe I should have done it a long time ago, but I never said I was smart, just obstinate. I was a PC bigot.

But now, I've had it. I'm mad as hell and I'm not going to take it anymore.

In the coming weeks I'm going to keep a diary of an experiment my company began at 6 p.m. April 29, 2005 an experiment predicated on the hypothesis that the WinTel platform represents the greatest violation of the basic tenets of information security and has become a national economic security risk. I do not say this lightly, and I have never been a Microsoft basher, either. I never criticize a company without a fair bit of explanation, justification and supportive evidence.

I have come to the belief that there is a much easier, more secure way to use computers. After having spent several years focusing my security work on Ma, Pa and the Corporate Clueless, I also have come to the conclusion that if I'm having such security problems, heaven help the 98% of humanity who merely want a computer for e-mail and multimedia.

Even though I'm a security guy going on 22 years now, my day-today work is pretty much like everyone else's. I live on laptops and use my desktops at home and the office for geeking and experimenting. My two day-to-day laptops (two, for 24/7 backup) are my business machines. I don't need them to do a whole lot - except work reliably, which is why I am fed up with WinTel.

I want my computer to function every time I turn it on. I want my computer to not corrupt data when it does crash. I use a handful of applications: Microsoft Office, e-mail, browser, FTP client and some multimedia toys. Regardless of format, they should work without

I live on the 'Net. I do not want my browser to eat up all of my memory. In the WinTel world I need an assortment of third-party tools to

#### Mad as hell, switching to Mac

try to keep my PC alive. That's just crazy.

Why does WinTel have these problems? I have heard all sorts of explanations, and I don't subscribe to any of them. I've come up with my own (hopefully rational) reasons WinTel will fail — and has to fail:

- Windows is complex, trying to be everything to everyone. This complexity comes at a terrible price: downtime, help desks, upgrades, patches and the inevitable failures.
- When a new operating system or service pack is released, there are tons of changes to the functionality.
- WinTel machines use different versions of BIOS. They are not all equal, nor do they all have the same level of compatibility.
- Some Windows software applications are well written; others take shortcuts. Shortcuts may work in some environments, but not all, and ultimately the consumer pays in lost time, availability and productivity.
- Hardware. There are hundreds of "WinTel-compatible" motherboards, each claiming to be better than the next. Whatever.
- Memory Not all RAM is equal. Some works well. Cheap stuff doesn't.
- Hard disks. Same problem: cheap or reliable. Your call.

Here's my answer to the WinTel problem: We need an open Simple Operating System (SOS) that meets the needs of the majority of people who buy PCs for everyday home and enterprise tasks. Get rid of the complexity and simplify the interface between SOS, BIOS and hardware. In other words, KISS. You know what it means. KISS SOS.

Because SOS doesn't exist yet, my company has given up on WinTel We have successfully moved to Mac in less than two days. Think about it: a security-friendly alternative that works and doesn't require gobs of third-party utilities to safely perform the most mundane tasks. Please follow the details of our experiment at www.securityawareness.blog spot.com. It's already way more interesting than I thought it would be.

Schwartau is a security writer, lecturer and president of Interpact, a security awareness consulting firm. He can be reached at winn@thesecu rityawarenesscompany.com.

I want my computer to function every time I turn it on. I want my computer to not corrupt data when it does crash.

## Networks drive

#### BY CAROLYN DUFFY MARSAN

Ready to back out of your driveway, you put the car in reverse and press the gas. Nothing happens. You get out and find your neighbor's child on a tricycle behind the car and below your field of view. Your car was smart enough not to go.

Sound far-fetched? Not according to engineers who specialize in automotive electronics.

The development of high-speed, integrated communications systems that link what were stand-alone systems such as the engine and braking systems — could make socalled virtual bumpers possible in five to 10 years.

Already 30% of the cost of a new car is in the electronics: the chips, wires and networks that support features ranging from automatic door locks to anti-lock brakes to airbag deployment. Today's cars have more computing power than was used in the Apollo moon landing more than 30 years ago.

And carmakers plan to pack in more. To complement existing satellite-delivered navigation, motorist-aid services, and built-in cell phones and entertainment systems, manufacturers will add everything from in-vehicle Internet access to remote maintenance services that can troubleshoot problems and identify misbehaving parts before they fail.

"Vehicles are becoming computing platforms that can access any data at any time," says Jim Colson, a distinguished engineer with IBM working on automotive elec-

tronics systems."A zillion new information services are possible when you add network capability to the vehicle in conjunction with network capability on other devices."

As automotive electronics become more complex, car manufacturers are borrowing a page from the network industry, relying on shared networks and standard protocols to support internal communications

between control systems. They're also turning to industry standards such as Bluetooth and Wi-Fi to support links to external systems that provide traffic, weather, entertainment and other information.

Today's cars have a half-dozen different proprietary networks that carry messages from control systems to the devices being operated. Until recently, each car manufacturer and car model had its own network parts. These are hardened, automotive-specific networks with ultra-reliable electronic components that can withstand vibration and operate in extreme heat and cold.

The latest trend is toward standardization so car manufacturers can save money on components and software

development. "Car manufacturers across the globe are moving to standards because if they have a single network it cuts down on the number of connectors and controllers required, and it reduces design and production costs," says Dan Benjamin, an automotive research analyst with ABI.

Companies are converging on several standards for internal networks that address different speed requirements (see graphic, page 74). "There's a lot of work across all

Car makers are migrating to standard network protocols, interfaces and chipsets for controlling everything from engine and braking systems to power windows and door locks.

> the car manufacturers to get these to be industry standards," says Dennis Bogden, director of powertrain electronics for General Motors."If you need a high-speed data link you grab this one, and if you need a low-speed data link you grab another one. We've quit trying to have differences in this underlying technology."

At the same time carmakers are looking to extend the use of those networks to replace the spaghetti of wire used to support functions such as turning on the engine and operating lights.

New automatic toll-paying systems use Dedicated Short Range Com-

munications, an emerging 6M to 54M bit/sec, two-way wireless system that might be used to download files and music.

Digital satellite radio will let drivers

download real-time news, informa-

tion and entertainment services.

gers will be able to download music files or the latest navigational maps using Wi-Fi, which is the technology most likely to provide in-vehicle Internet access.

Drivers and passen-

Bluetooth will be used to link cell phones to built-in microphones and speakers, allowing for hands-free calling.

> Car makers are developing remote monitoring services that can be used to schedule preventative maintenance checks and run diagnostic tests that help prevent breakdowns.

#### The connected car

Network advances will address everything from in-car entertainment to vehicle diagnostics and safety.

tics because information on the network gets shared." But those are just the network advances that are helping carmakers. Most of the other advances are designed to appeal to buyers.

Hands-free

Take built-in wireless communications. More carmakers are going wireless to support a host of new navigation and safety services.

> Bluetooth is the technology of choice to support cell phones. The auto industry is developing a special profile of the

compares with seven manufacturers that offered the technology in 2004.

Longer term, car manufacturers plan to use Bluetooth to support services such as remote vehicle diagnostics, advanced safety features and vehicle-to-vehicle communications, ABI Research says.

"We're seeing a couple different [automotive information] services use Bluetooth as the data link to the service provider," says Frank Viquez, director of automotive research at ABI. "This cuts down on the hardware and service costs because the driver owns the phone and pays for the call."

Virtual bumpers will have sensors that can stop the car if something is blocking the path.

With advancements in compression techniques and smaller antennas, digital satellite radio could deliver

streaming video.

Emerging motorist assistance services, such as General Motor's OnStar, provide two-way voice and data communications links, to deliver verbal directions, answer questions and even unlock cars.

Bluetooth standard dubbed Bluetooth Handsfree 2.0 - that will link a built-in microphone in the car to any cell phone without

requiring a docking station, allowing for hands-free calling. Every car manufactur-

er will have Bluetooth up and running in high volume — 200,000 units per year within five to seven years," predicts Paul Hansen, publisher

Anti-coilision applications are under development that would allow a stopped vehicle to communicate to approaching vehicles, warning them to slow down.

of the Hansen Report on Automotive Electronics in Portsmouth, N.H. Hansen says Bluetooth represents the first general-purpose network standard that the automo-

with Bluetooth hands-free calling devices that are integrated with navigational systems and radios. Drivers can place calls by simply saying a telephone number. The systems can also dial numbers brought up by the car's navigation on the dashboard and use a car's speaker system.

Seventeen car manufacturers will offer Bluetooth-based communications options in their 2005 production vehicles, according to the Telematics Research Group. This

**Back-seat entertainment** 

But Bluetooth is only one of the technologies that are emerging to connect the computer-based car to the outside world. The rising demand for in-vehicle entertainment services has carmakers looking at everything from satellite links to Dedicated Short

Range Communications (DSRC) and Wi-Fi.

Nearly 10% of vehicles sold last year had back-seat entertainment systems, according to Telematics Research Group, which estimates that figure will rise to 25% by 2010.

On the horizon are real-time news, information and entertainment services that are integrated with in-vehicle entertainment systems. The most promising way to deliver these services is digital satellite radio. With improvements in compression techniques and smaller antennas, digital satellite also could deliver streaming video.

"The newest thing as far as wireless data is satellite radio," Viquez says. "It's one-way communications. You can't have an uplink, but the downlink is being used to offer some basic services into the vehicle."

Although the main focus of satellite is to provide entertainment services, the technology also could support car safety or navigational systems. "Satellites are going to be used to deliver a lot more capabilities," Viquez predicts. "High-definition radio receivers will start shipping in some cars next year, and advanced applications for traffic and weather have been demonstrated. That wouldn't be hard to integrate with a telematics or navigational system."

Another technology that could bring high-speed, twoway communications to automobiles is DSRC. DSRC was designed specifically for the transportation industry to complement cellular communications, supporting 6M to 54M bit/sec wireless data transfer rates. Mercedes-Benz has started shipping cars with DSRC support in Germany.

"They have a DSRC toll-collection system in Germany that is launching full scale in January."Viquez says. "Any car that is made for that market is going to have DSRC." DSRC ultimately could support high-speed downloads of files and music, he says.

Further out on the horizon is in-vehicle support for Wi-Fi technology. By around 2006, some car manufacturers will be looking to install self-contained Wi-Fi to allow users to load music and files into the car,"Viquez says. "With 20G

Shared data networks are replacing individual wires and dedicated networks used to control electronic components to simplify car wiring.

a lot and add a lot of weight."

These networks "reduce our costs and enable us to introduce technology faster," says Martin Yagley, director of audio, telematics and driver information systems at Chrysler. "The benefit to the buyer is improved diagnos-

ue to get better data links and higherspeed data links, we're putting more information on these data links and [relying] less on hard wires," Bogden says. "That takes away from having

to have wires, which cost

"As

we contin-

tive industry has embraced. Acura and Daimler-Chrysler are already shipping cars

system, say for a restaurant. Calls are controlled via buttons

or 40G of hard disk in the car, this is something manufacturers can do without offering any services. Users could download files and other content to the car such as traffic reports or news."

Then gas stations could install hot spots and start offering new information services to drivers. "You could update your navigational maps in your car based on current construction maps as part of your gas station experience," Colson says.

"We're trying to develop a user-friendly interface so customers using their home entertainment systems can seamlessly

download content into their vehicles," Yagley says. "The vision with Wi-Fi is that you'd have a router in your garage for downloading media or content."

And some day dealers might use Wi-Fi to siphon diagnostics information out of cars. But use of Wi-Fi for Internet access while

cars are in motion is still just a pipe dream today. You'd need to have Wi-Fi hot spots along the highway, Yagley says. That won't happen anytime soon.

#### Keeping drivers, passengers safe

Of course the wireless communications links aren't just for fun. Carmakers look to the technologies to support information services for areas such as safety, maintenance and navigation.

At the forefront is General Motor's OnStar service, which provides two-way voice and data communications to vehicles to handle requests for roadside assistance, remote diagnostics and driving directions. OnStar can, for example, unlock doors, track stolen cars, check a car's engine and even detect if an airbag has been deployed and dispatch emergency teams.

All new GM vehicles come with OnStar and one year of free service. A rival service from ATX Technologies is available in vehicles from Mercedes-Benz and BMW.

Similar technologies might some day make it possible for car dealers to offer remote monitoring services that help preempt breakdowns. Today services such as NetworkCar are available for managers of car fleets, which lets them run regular diagnostic tests, monitor miles per gallon, check odometers to schedule preventive maintenance and even identify cars that haven't been used much.

"Where the future is headed is safety-oriented diagnostics," Bogden says. "We could end up offering remote diagnostics, where OnStar could prompt you to run certain diagnostics on the vehicle or tell you what to do if you're getting trouble codes. It could tell you to pull the car over even if you don't see anything wrong with it."

Increasingly, GM expects to link OnStar to a car's internal control systems. OnStar's navigational system might tell the car it will soon head up a hill or around a corner, in which case the car's control system might automatically shift the transmission.

"In the future, we'll be bringing information from the outside world into the car," Bogden says. "Today, a car's navigational system can tell if it's sitting in traffic and it can try to adjust the idle speed of the engine to help the fuel economy. It's not a big deal, but it's a first test of how we can start using some of this [external] information inside the car."

The communications systems behind information services like OnStar are migrating from analog to digital in conjunction with a similar migration going on in the cellular industry

"Analog networks will be phased out by 2008,"Viquez says."OnStar started migrating their hardware late last year to be both analog and digital capable. We're figuring that, by this time next year, they'll have an all-digital strategy?

The OnStar and ATX systems show the promise of telematics, two-way data communications systems being developed for applications such as traffic management. With these systems, cars would



Use Microsoft®Outlook® or your browser to connect

to a powerful industry-leading messaging server. Communicate in real time with anyone in your company using secure instant messaging. Streamline group collaboration with shared calendars and free-busy meeting scheduling. Reduce junk e-mail and stop viruses. All this, and Ipswitch Collaboration Suite is easy to install, manage and use. Play it "safe" like Frank. Or be smart. Go to <a href="https://www.ipswitch.com">www.ipswitch.com</a> and find success with Ipswitch Collaboration Suite.

■ Reliable

■ 60 million mailboxes worldwide

www.ipswitch.com or call 800-793-4825

©2005 Ipswitch, Inc. All product names are the property of their respective owners.



## YOUR JOB IS TO KEEP SYSTEMS AND APPLICATIONS RUNNING. OUR MISSION IS TO KEEP PEOPLE AND INFORMATION CONNECTED. LET'S WORK TOGETHER.

Continuous access to information no matter what. That's Information Availability. It's what your employees, suppliers and customers demand every minute of every day. But to deliver it flawlessly, you need a massive global infrastructure, redundant systems and diverse networks being monitored and supported by skilled technical experts at secure facilities. That's exactly what SunGard provides.

As a result, we can offer you a higher level of availability and save your company, on average, 25%\* versus building the infrastructure yourself. Plus, it's a vendor neutral solution that lets you control your data, applications and work while giving you the flexibility to adjust to the changing needs of your business. But best of all, it lets you spend more time solving business problems and less time solving technical problems.

For years, companies around the world have turned to SunGard to restore their systems when something went wrong. So, it's not surprising that they're now turning to us to mitigate risk and make sure they never go down in the first place.

You want your network and systems to always be up and running. We want the same thing. Let's get together. To learn more, visit www.availability.sungard.com or call 1-800-468-7483.

**SUNGARD®**Availability Services

| Keeping **People** | and **Information** | **Connected.**™

\*Potential savings based on IDC White Paper, Ensuring Information Availability: Aligning Customer Needs with an Optimal Investment Strategy.

continued from page 72

have sensors that communicate with roadside sensors for sharing information such as traffic reports.

Telematics systems require massive infra-

structures to be built, and it's not clear what the economics are for building that out. For traffic management applications, a government agency would need to install sensors on roads that track traffic patterns and communicate with cars to re-route vehicles.

Even further out is car-to-car communications, through which sensors on one car could relay messages to sensors on another car about traffic. It's conceivable that cars could automatically adjust speed and direction to prevent accidents based on information they receive from each other.

"The future is not car-to-roadside communications, but car-to-car communications. If you think of each car as a network probe, the car knows how fast it's going and where it is," Hansen says. "In an anticollision application, a car that slows down to zero could transmit that information backwards to vehicles coming up behind so they can slow down, too."

#### **Another mobile device**

With all of these new communications technologies, automobiles are likely to become just another mobile device, albeit more mobile than most.

"Fifty million vehicles are manufactured, and those 'devices' desire to be connected to the network for a variety of reasons," Colson says. "With OnStar, you see the ability to have a call center provide a vehicle with additional data center support. You'll see more and more of that.

Other advances that Colson sees are the use of natural language communications between the driver and the car, advanced diagnostics capabilities, realtime traffic and navigational information available from multiple sources, and new types of displays that require more powerful processors.

"We're doing some of the same things in cars that we do on desktops," Colson says.

As exciting as these developments are, they come at a cost. "The downside to all the networking in the vehicle is the rising complexity of the electronics," Hansen says.

"If you take the control systems that are operating independently and connect them, you have an exponentially greater chance of reliability problems as they interact with each other. That's the rub. Electronic complexity and quality do not correlate well," Hansen adds.

#### **Automotive standards**

Car makers are converging around several standards for internal control networks.

LIN - Local Interconnect Network, a low-speed network used in applications such as turning on lights and fans or locking doors.

CAN --- Controller-Area Network, a shared data communications link used for high-speed, real-time applications such as controlling the car's engine or the transmission.

Safebywire — For the delivery of critical messages such as the release of airbags during a collision.

FlexRay - FlexRay is an ultra highspeed link being developed for systems that need to interact, such as having the anti-lock braking systems communicate with the engine so they work together to slow the car.

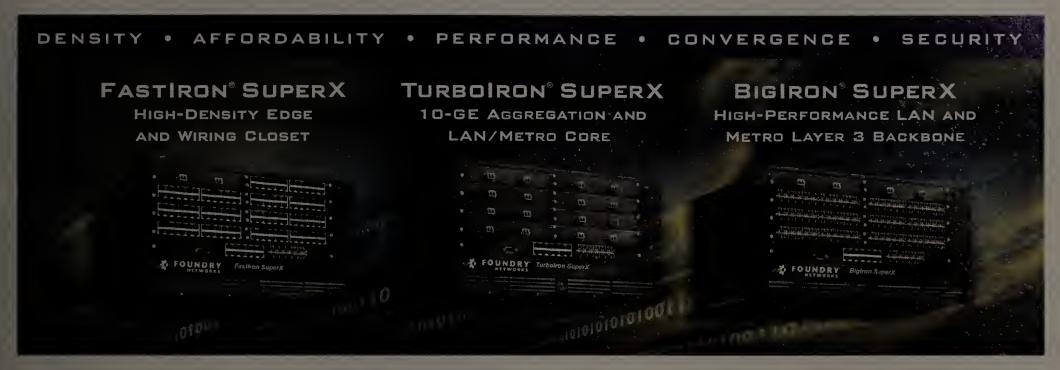
MOST — Media Oriented System Transfer, a fiber-optic network optimized for automotive applications.



No Akamai Technologies, Inc. All Rights Reserved. Akamai and the Akamai logo are registered trademarks.

#### SUPERX 10-GE SWITCH FAMILY

A UNIFIED ARCHITECTURE FOR ENTERPRISE AND SERVICE PROVIDER LAN AND METRO INFRASTRUCTURES



ith the performance you expect from Foundry—now comes the price, flexibility, and density breakthrough you've been waiting for. The new SuperX family of Layer 2/3 modular switches provides the industry's highest Gigabit Ethernet and 10-GE density per rack and the lowest 10-GE price per port in a modular switch. The SuperX family delivers an extensive feature set, standards-based Power-over-Ethernet, support for full Layer 3 (including OSPF and BGP4), and wire-speed 10-GE solutions. From the enterprise to the service provider environment: SuperX is the right choice!

#### FASTIRON SUPERX

- . EDGE & WIRING CLOSET SWITCH
- EXTENSIVE QOS AND SECURITY FEATURES
- EASE OF UPGRADE TO POE

#### TURBOIRON SUPERX

- 10-GE AGGREGATION AND CORE SWITCH
- PRE-CONFIGURED WITH 16 10-GE PORTS PER SWITCH
- INDUSTRY LEADING PRICE OF LESS THAN \$2,500/10-GE PORT

#### BIGIRON SUPERX

- ENTERPRISE AND METRO L3
  BACKBONE SWITCH
- HIGH-PERFORMANCE LAYER 3 ROUTING PROCESSOR
- UP TO 1 MILLION ROUTES AND 200+ BGP PEERS

#### HIGH DENSITY

- Up to 204 Ports GE-SFP Mini-GBIC
- Up to 204 Ports 10/100/1000
- Up to 192 Ports 10/100/1000 PoE
- Up to 16 Ports 10-GE

#### HIGH PERFORMANCE

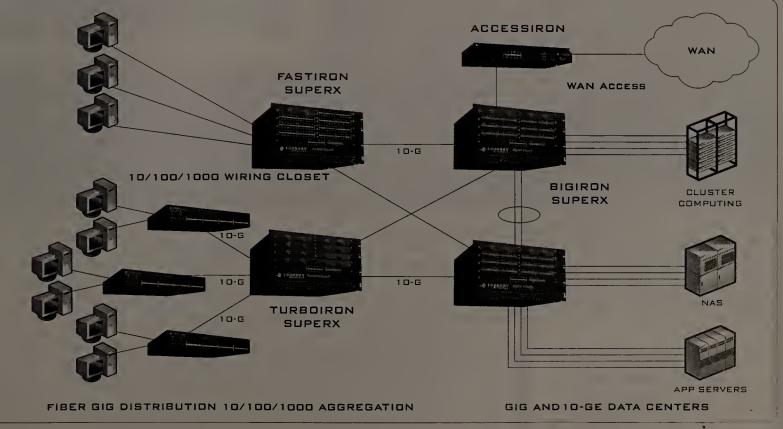
- Wire-Speed Every Port
- Up to 304 Mpps Throughput
- 510-Gbps Switching Capacity

#### CONVERGENCE READY

- Standards-Based Power-over-Ethernet
- Purpose-Built for Data, Voice & Video
- Integrated Wired & Wireless Support

#### IRONSHIELD SECURITY

- Wire-Speed ACLs & Rate Limiting
- Secure Shell, Secure Copy, SNMPv3
- DoS Attack Protection
- 802.1x & MAC Authentication with Dynamic Policy





FOR MORE INFORMATION PLEASE CALL:
US/CANADA 1 888 TURBOLAN,
INTERNATIONAL +1 408.586.1700
OR VISIT OUR WEBSITE AT WWW.FOUNDRYNET.COM/SX

Foundry Networks, Inc. is a leading provider of high-performance Enterprise and Service Provider switching, routing and Web traffic management solutions including Layer 2/3 LAN switches, Layer 3 Backbone switches, Layer 4-7 Web switches, wireless LAN and access points, access routers and Metro routers.

## 

Buffalo TeraStation NAS box

#### Buffalo sets the bar with 1T byte for \$1,000

**BY JAMES GASKIN, NETWORK WORLD LAB ALLIANCE** 

n 25 years, desktop storage has jumped from the IBM PC with a 360K-byte floppy drive to Buffalo Technology's TeraStation, which offers 1T byte of capacity. We can make a good case for small businesses, workgroups at larger businesses, and even upscale home networks (digital video fans gobble gigabytes like candy) to plop down \$1,000 for a terabyte of disk storage.

While Buffalo says the TeraStation combines ease of use with enterprise-class features, we were a bit skeptical. True, the installation of the network-attached storage (NAS) box was quick and easy, and you can apply the enterprise label because of the terabyte capacity. But any enterprise-class storage device should include more management tools, directory integration and hot-swappable disk drives, all lacking in the TeraStation.

Installation included automatically finding an open IP address upon booting (once we gave the administrator password to enable client DHCP settings) and making an easy connection from a Windows client running the management utility from an enclosed CD. Tera-Station only supports Linux connections via Server Message Block Windows networking, but our Xandros 3.0 Linux Desktop had no problem accessing the unit that way. Default settings include enabling AppleShare but not FTP (having anonymous FTP access on by default

isn't secure), and the four Western Digital 243G-byte disk drives are set to spanning mode, pooling all the disk space into one huge volume.

You can run the system in Standard Mode, where each disk becomes a separate volume; Mirroring Mode, where pairs of disks match up in a RAID-1 mirror configuration, which gives you two fault-tolerant 500M-byte volumes; or RAID-5 mode, which cuts the disk space by 25%, to 750G bytes, but increases performance and fault tolerance to survive a failure of any one disk. A journaling file system also improves reliability, mounting speed and failure recovery. These are high-end storage features, and if the drives were hotswappable we wouldn't argue about the enterprise label.

Although usable space only showed 928G bytes after installation, the Tera-Station still had more capacity to fill than our lab could cram onto it. Performance matched the lower end NAS products we've tried because the four drives are Integrated Drive Electronics (IDE) rather than SCSI, spin at 7,200 rpm, and have only a 2M-byte buffer. As the price of Serial ATA drives drop, Buffalo could improve performance by upgrading its Ultra ATA/100 drives to SATA and leveraging the 8M-byte buffers standard with drives using that interface. The lone Ethernet port on the TeraStation auto-senses between 10M-, 100M- and 1G-bit speeds, and supports Jumbo Frames. Again, this was an interesting mix of high- and low-end

A client-based management utility shows status and lets you change the IP address of a TeraStation, but is really useful only to launch the browser-based administration utility. The Web utility does all the heavy lifting, including setup, network configuration, disk maintenance, user and group management, print server management and status screens. The TeraStation can respond to smart UPS shutdown commands, and also can e-mail up to five addresses with a limited number of status messages (such as an OK message every 24 hours, system backup completion and emergencies). User and group management options strictly follow Windows workgroup or domain network rules, limiting their effectiveness in larger installations that rely on Microsoft's Active Directory or any other directory service, but allowing enough control for small businesses and workgroups.

Client back-up support is critical for small to midsize businesses and home users Buffalo targets, yet TeraStation only meets these needs halfway. The supplied back-up utility lacks the ability to perform incremental backups, storing full back-up sets each iteration rather than copying changed files since the last full backup. Restoration works only at the folder level, so restoring one file means restoring all the files in the directory, unless you restore to a new location and manually pick out a file. You can manually drill down the back-up file structure and drag a file, but both options are far behind better back-up software. Buffalo just made a deal with Tanagra (www.net workworld.com, DocFinder: 7030) to include its Memeo back-up software in the second quarter, but it's only a 30-day trial (about \$30 to purchase).

Backing up the TeraStation includes more options and controls than the client back-up utility, especially to a second TeraStation or attached USB hard drive. Incremental TeraStation backups are supported, as well as compressed and encrypted transmissions over a network. USB-connected drives also can be used for backup, giving some level of offsite storage option when using a portable drive. One annoyance is that the over-the-network backup only works to another TeraStation unit.

Second, the USB-attached drives never communicated properly with the Tera-Station (we tried two different drives, one from lomega and another from Olixir) so we couldn't try the USB backup. Buffalo's free technical support couldn't explain the problem. But we did test one of the first three TeraStations in the U.S., so this could just be a rough edge that will get smoothed over. Nevertheless, Euffalo deserves kudos for free technical support and a free phone call.

The TeraStation fills the near-enterprise gap quite well, giving enterprise-like stor-



The TeraStation should include more management tools, directory integration and hot-swappable drives.

age space at small-business prices, but at the expense of some enterprise controls. That said, the sight of a sleek silver case on a server rack or bookshelf holding a terabyte of disk space (or 1.6T bytes in the largest size) still amazes us. Configuring this unit as RAID-5 for the highest performance and fault tolerance costs only \$1.25 per gigabyte (750G bytes total). This level of storage space, reliability and performance has never been so affordable for small businesses or the home entertainment fanatic who has everything digital and now has the disk space for it all.

Gaskin is an author of books and stories about technology in Dallas. He can be reached at readers@gaskin.com.

#### 

Gaskin also is a member of the Network World Lab Alliance, a cooperative of the premier testers in the network industry, each bringing to bear years of prastical experience on every test. For more Lab Alliance information, including what it takes to become a partner, go to www.networkworld.com/alliance.

#### Net Results

#### TeraStation



Company: Buffalo Technology, www.buffalotech.com Cost: \$999 for 1T byte; \$1,999 for 1.6T bytes; \$799 for 0.6T bytes (600G bytes). Pros: Small, sleek, quiet; huge storage space; excellent NAS value for RAID storage. Cons: Poor client back-up software; no native Linux support (SMB access only); USB-attached drives didn't work.

#### The breakdown

- Management 25% 4

  Capacity/value 25% 5

  Backup 15% 3

  Installation 15% 4

  Documentation 10% 3
  - Features 10% 5
    TOTAL SCORE 4.1

Scoring Key: 5: Exceptional, 4: Very good; 3: Average; 2: Below average; 1: Consistently



Apply for your FREE
Network World subscription today!

A \$129 value
YOURS FREE

my.nww.com/b04



### What protects employees outside?

She works from home. She works from the road. And she endangers the network everywhere she goes. That's why you need Websense software—to provide security protection at the desktop and beyond. Close the security gap. Download your free evaluation today. www.websense.com/mobile5



## Management CARET ST ELOPMENT PROJECT MANAGEMENT BUSINESS JUSTIFICATION

### 10 troubleshooting tools

Network managers share the essentials any data center shouldn't be without.

**■ BY DENI CONNOR** 

Everyone who backpacks can rattle off the 10 essentials by rote — map, compass, flashlight, extra food and clothes, sunglasses, first-aid kit, knife, waterproof matches, fire-starter. They are essential tools anyone who hikes needs as insurance against the unexpected.

A network manager is often stretched in many directions by department heads who try to use their clout to get their applications pushed to the top of the heap.

Likewise, network managers rely on must-have troubleshooting tools for diagnosing problems with their networks, servers and desktop PCs. What follows are the 10 tools network managers deem essential to their network management arsenals.

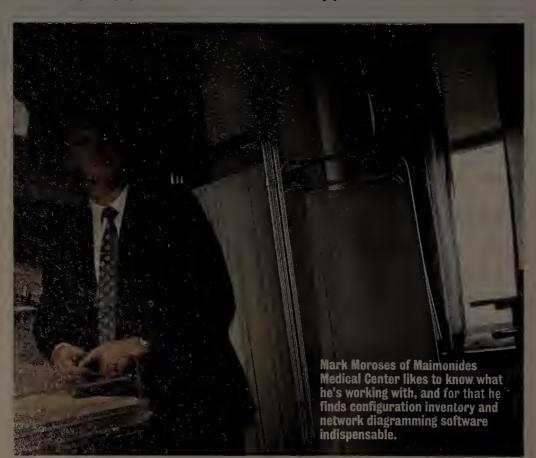
**1. Gonfiguration inventory.** An inventory of the configuration of workstations and servers on a network is instrumental in being able to root out the source of trouble, according to Mark Moroses, senior director of technical services and security officer at Maimonides Medical Center in New York. "This can be on paper, but it cannot become suspect — the data has to be maintained and trusted," he says. "It is priceless to know the exact configuration of equipment inside the problem domain."

Moroses uses Bindview's NETinventory. Another popular option is Tally Systems' TS Census, which Novell recently acquired and added to its ZENworks Asset Management.

**2. Network diagramming software.** "You cannot troubleshoot a network issue without an accurate, complete understanding of the equipment involved, and for that you must be sure of the communication path," Moroses says.

Network diagramming software is key to establishing the critical links between network gear. Microsoft's Visio 2003 is the market leader for diagramming the physical configuration of a network.

3. A device-polling system. Software that automatically polls network devices — servers,



switches, printers and routers — to see if they are connected also is important When a device doesn't respond to a poll, it is usually the first signal of trouble.

"Polling is an accurate, clear method for assessing the scope of the problem," Moroses says.

"For example, multiple devices in multiple locations may be affected at the same time."

Moroses says relying on users to complain that a printer isn't working or that they can't connect to the network is usually misleading and results in IT staff taking longer to diagnose a problem. While SNMP traps can be useful, simple ping polling is worth its weight in gold, Moroses says.

Many devices such as Cisco routers and switches also ship with a device-polling configuration option. Fidelia's NetVigil also provides for polling of any SNMP-enabled device.

- **4. Application logs.** Each application provides a log file of error codes. At Maimonides, Moroses says by reviewing the logs early in the troubleshooting process he can reduce the size of the fault domain. He says application logs are especially effective when used in combination with network device logs.
- **5. Network device logs.** Reviewing network device logs for switches, routers and other network gear also can help define and diagnose a problem quickly. When a network manager configures a system so that all logs are sent to a central source a syslog on the server they can be particularly helpful. A freely downloadable syslog server is available from Kiwi Enterprises at www.kiwisyslog.com.
- **6. Microsoft Excel.** Some tools such as Excel come already installed in a network manager's kit. Using Excel to compare log entries for multiple network devices can help IT managers identify patterns. Because most logs are time-stamped, Excel spreadsheets represent a good way to see "an entire forensic picture," Moroses says. Users in open source environments might be interested in the OpenOffice Calc spreadsheet.
- **7. Remote control software.** For any organization spread over a wide geographic area, a remote control tool is extremely useful in checking theories, or patching or reconfiguring remote devices or workstations. Popular tools include Symantec's PC-Anywhere, Funk Software's Proxy, VNC (Virtual Network Computing) and CrossTec's NetOp Remote Control.

Shane Wilson, coordinator of network services for Centre College in Danville, Ky, uses the open source tool Putty to remotely access servers and devices.

**8. A protocol analyzer or cable tester.** For complicated connectivity issues, a hardware- or software-based protocol analyzer is essential. There are some issues that cannot be diagnosed without packet-level inspection.

Finisar's XGig Analyzer Suite, the Ethereal protocol analyzer and Fluke's OptiView Protocol Expert are popular choices. Tripplet Fox & Hound wire-tracing kit also can be used to troubleshoot wiring problems.

Wilson, who uses cable testers from Fluke or Microtest, says, "You need to be able to rule out physical-layer problems." He also uses Ethereal's freely downloadable open source protocol analyzer. "Sometimes you just have to get down and see what data is being passed back and forth on your network to solve a networking issue," he says.

**9. The Internet.** Another tool of daily use — the Internet — can be invaluable for researching complicated problems or device configurations, or finding patches, Moroses says. HP's site has a wealth of patches available, and Novell's NetWare and other forums offer a fair degree of accurate advice.

Wilson says the Internet also provides a plethora of information."The ability to get help, download drivers and find documentation on the Internet make all of the difference,"Wilson says."I don't know how I would do my job without all of the informational resources of the 'Net."

**10. Imaging software.** At Maimonides, Moroses uses Symantec's Norton Ghost to reconfigure and reprovision workstations. "The issue is being able to reload any device to a known good copy, virus free," Moroses says. "Not only is it nice for building a new machine, but by making it a 10-minute process it can also be used to take possible theories 'off the table' by making sure the live configuration is valid."

Among other imaging software are Altiris' Client Management Suite and Microsoft's Remote Installation Services. ■



Make a name for yourself with Windows Server System. An upgrade to Microsoft® Windows Server System™ made it possible for 50,000 worldwide employees at Nissan Motor Company to have more secure remote access to their e-mail and calendars from any Internet connection, without the hassle and expense of a VPN. Here's how: By deploying Windows Server™ 2003 and Exchange 2003, not only did Nissan IT meet the CEO's demand for better global collaboration, they expect to save at least \$135 million by streamlining their messaging infrastructure. To get the full Nissan story or find a Microsoft Certified Partner, go to microsoft.com/wssystem



#### Aluminum Cabinets provide protection against dust, moisture, and EMI



The new Form 4 range of rugged aluminum cabinets from Optima EPS has been designed to provide reliable protection to UL-508 Type 12 specifications, as well as offering options for up to 100dB of EMI attenuation. The cabinets are easily customized to suit the required height, depth, and width, including 19" and 24" widths

The combination of Nema 12 protection and RFI shielding in a low weight cabinet makes the Form 4 cabinet suitable for a wide range of applications, such as computer simulation, test and measurement, industrial control, and computer storage installation. For maximum flexibility, the reinforced doors are field-reversible and open 122 degrees for access, with concealed hinges and multipoint locking for security and clean lines.

#### We deliver customized 19-inch cabinets in just 2 weeks

Every electronic system is different, so its not surprising that standard 19-inch cabinets don't always offer the ideal system packaging. That's why Optima has introduced the Custom Cabinet 14 service: customized cabinets delivered to your door in just 14 days.



You decide where you want the holes and handles. How many shelves you need. Where the doors should be. And what accessories you want. Then we put it together - fast.

So, with the Optima EPS Custom Cabinet 14 service, you don't have to keep space hungry, expensive inventory, because your ideal cabinet is just 2 weeks away.

Wall-mount swing frame suits both electrical wiring and 19" electronic equipment applications.





a versatile range of wall-mount swing frame cabinets, designed to suit both electrical wiring and electronics applications. Locks to the rugged front and rear doors permit the whole frame to clear the wall to simplify installation and maintenance for electrical contractors and manufacturing, instrumentation, and automation applications. The Frame is designed to accept standard 19" racks and fittings, as well as electrical components, and is available in a range of colors and six standard sizes from 23" x 14" to 48" x 20".



#### **Cabinet Passes NEBS Level 4**

This range of 19" and 24" wide cabinets use welded aluminum construction to provide lower weight NEBS compliance for seismic regions. Heavy-duty-aluminum extrusions are combined with seven-guage steel base to provide a rugged floor-mounting design able to resist shock, bending and vibration stresses. The cabinets are designed for deployment in earthquake-prone areas to Zone 4, and comply with Belcore TR-63/ANSI-329, suiting applications in defence, rack-mount computers, manufacturing, and telecom.



### If we can do this then your server application is safe with us!

#### **NEBS Compliant Seismic Cabinet**

Optima's rugged design is the earthquake and vibration resilient foundation you need to securely protect and support your equipment. Our knowledge and design experience has enabled us to manufacture over 5000 seismic hardened cabinets which are installed in Zone 4, NEBS Compliant infrastructures worldwide!

Our vast product range and our ability to customize cabinets, consoles, and instrument cases make optima the ideal choice for all your enclosure needs.

Visit us at www.optimaeps.com to find out more or call us today on 770-496-4000

Custom
Commercial
Telecom
Seismic
EMC
Desk Systems
Instrument Cases
Accessories

Optima EPS
Cabinets & Enclosures

## The Right Call for SUCCESS

Computer Solutions At Your Home & Business

1-800-905-GEEK

FRANCHISES AVAILABLE

## JOIN THE \$300 BILLION COMPUTER SERVICE BUSINESS.

Find out how you can invest in one of Entrepreneur

Magazine's "Fastest-Growing Franchises" #48 (2005),

"Franchise 500®" rank #258 (2005), and "Top New

Franchises" #15 (2005). Single, Multi-Units and Area

Development Opportunities are now available.

For more information call

### 888-667-4577

(ext. 309)

or visit us at:

geeksoncallfranchise.com



Make The Right CALL!

1-800-905-GEEK





#### How much can your network analyzer see?

Observer is the only fully distributed network analyzer built to monitor the entire network (LAN, 802.11a/b/g, Gigabit, WAN). Download your free Observer 10 evaluation today and experience more comprehensive real-time statistics, more expert events, and more in-depth analysis letting you dive deeper into your network than ever before. Choose Observer.

- DANGER Guard against the latest network threats by identifying and isolating infected systems automatically.
- DATA MINING Analyze gigabit traffic and massive amounts of data with Observer's expanded options for data mining.
- TRAFFIE Identify broadcast storms, monitor excessive traffic, and optimize bandwidth with Observer's many utilization metrics and over 30 real-time statistics.

**US & Canada** 

toll free 800.526.5958

fax 952.932.9545

**UK & Europe** 

+44 (0) 1959 569880

www.networkinstruments.com/analyze



#### ASSET MANAGEMENT IN MINUTES, NOT DAYS.





The problem with traditional Asset Management solutions, is that while claiming to offer accelerated levels of ROI once installed, they often overlook the cost of implementation in the first place.

Hours turn in days, days into weeks and weeks into months. Before long, the implementation cost exceeds the initial purchase price and that's before you consider the on-going support.

But there is an alternative. One which offers all the functionality you'd expect from an award winning asset management suite but with only a 30 minute implementation path.

NetSupport DNA combines powerful powerful Hardware & Software Inventory with Software Distribution, unique Application & Internet Metering, best of breed PC Remote Control, Enterprise Reporting and an optional web based Helpdesk.

Think about it, but not for long as the clock's ticking - in 30 minutes, you could be gathering vital asset information and enterprise reports for the whole of your network (and also those users not connected to it).

Visit www.netsupport-inc.com and download a full trial license today.

H/W Inventory

S/W Inventory

S/W Metering

S/W Distribution

Internet Metering

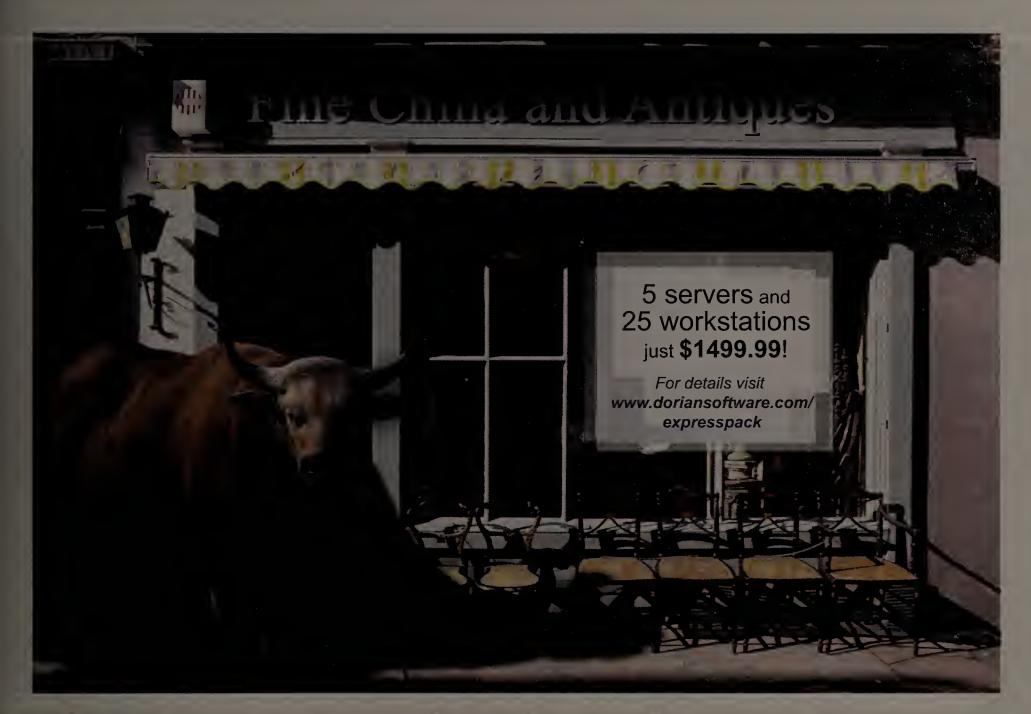
Helpdesk

Remote Control

Reporting

NetSupport-inc.com

Sales: 1-888-665-0808



## SERIOUS EVENT LOG MANAGEMENT. WITHOUT THE BULL.

Since 1997, Dorian Software Creations has been pioneering event log management. Now, more than ever, security professionals are looking to the Dorian Total Event Log Management Solution to meet the expanding demands of compliance requirements and internal security and auditing standards.

Dorian's approach addresses each step in the life cycle of log data and provides a comprehensive view of your network health and security. In fact, Dorian has never focused on just one log type, because as you know, threats appear in many forms. Our approach provides frontline monitoring of the event log and syslog with *Event Alarm*, automates the collection and centralization of log data with *Event Archiver*, and provides filtering and reporting on those events of interest with *Event Analyst*. Finally, *Event Rover* provides an additional level of convenience for on-the-fly forensics and log data mining.

Look to the company with the widest, most modular suite of log management solutions. Auditors are expecting perfection from you, and you should expect the best in scalability, flexibility, and support of your log management software strategy. Avoid mega-management consoles that over promise, under perform, and wreak havoc on IT budgets and networks. Look to Dorian Software Creations for total event log management - without the bull.















www.doriansoftware.com/withoutthebull FOR FREE WHITE PAPERS AND EVALUATIONS

#### LOCAL OR REMOTE SERVER MANAGEMENT SOLUTIONS

**UltraMatrix™** Remote

#### KVM OVER IP

- MATRIX KVM SWITCH WITH INTEGRATED REMOTE ACCESS OVER IP
- System-wide connectivity locally or over IP from any location worldwide
- Connects 1,000 computers to up to 256 user stations Supports PC, Sun, Apple, USB, UNIX, and serial devices

- Secure encrypted operation with login and computer access control Scaling, scrolling, and auto-size features

The UltraMatrix Remote represents the next generation in KVM switches. It not only provides a comprehensive solution for remote server console access, this access can be local or from any workstation on your network over IP.

#### UltraMatrix™ E-series

#### KVM SWITCH

- PROFESSIONAL MULTI-USER KVM SWITCH 2 - 4 KVM STATIONS TO 1,000s OF COMPUTERS
- PC or multi-platform ( PC/Unix, Sun, Apple, others) On-screen menu informs you of connection status between units in an expanded system

- Powerful, expandable, low cost No need to power down most servers to install

The UltraMatrix E-Series represents the latest in KVM matrix switch technolog, at

#### KVM RACK DRAWER WITH KVM SWITCH OPTION

The RackView offers the latest, most efficient way to organize and streamline your server rooms and multiple computers. The RackView is a rack mountable KVM drawer neatly fitted in a compact pull-out drawer. This easy-glide KVM drawer contains a high-resolution TFT/LCD monitor, a tactile keyboard, and a highresolution touchpad or optical mouse.

+281 933 7673

ROSE EUROPE

+44 (0) 1264 850574

**ROSE** Asia ROSE Australia

+65 6324 2322 +617 3388 1540 800-333-9343

Fold-Forward

WWW.ROSE.COM



Fold-Back

RackView **LCD Monitor** 





## How Do You Securely Reboot

Sentry Gives You Secure Web/IP Based Remote Site Management

- "NEW!" Secure Shell (SSHv2) Encryption «
  - "NEW!" SSLv3 Secure Web Browser «
  - "NEW!" Active Directory with LDAP «
    - SNMP MIB & Traps «
    - Integrated Secure Modem «
    - True RMS Power Monitoring «
- Outlet Receptacle Grouping for Dual-Power Servers «
- Fail-Safe Transfer Switch for Single-Power Supply Servers «
- Power-up Sequencing Prevents Power In-rush Overload «
- Temperature & Humidity Environmental Monitoring «
  - Zero U & Rack-mount Models «
- 110/208 VAC Models with 30-Amp Power Distribution «
  - NEBS Approved -48 VDC Models Available «

#### Server Technology

Solutions for the Data Center Equipment Cabinet

When servers and network devices in the data center lock-up, network managers need fast, secure and reliable tools to respond. With Sentry<sup>TM</sup> Remote Site Managers, an administrator can immediately reboot a remote system with just a few mouse clicks. Sentry also provides accurate input current power monitoring, environmental monitoring and integrated secure console management using \$5H.

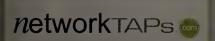


#### Server Technology, Inc.

Server Technology, Inc. 1040 Sandhill Dave Beno, NV 89521 USA

## free #1,900,895;1515 tel +1,775.284,2000 fax +1.775.284.2055 www.serverfech.com

cates@servertech.com



#### **TAP into Performance**

Monitor mission-critical links with the latest technology through new nTAPs

Stop jeopardizing network performance and risking costly downtime. Be confident you have maximum visibility into your full-duplex links by configuring an nTAP solution that fits your network and budget. Visit www.networkTAPs.com/visibility today.



For copper-to-copper connections

10/100	\$395
10/100/1000	\$995



#### 10/100/1000 Conversion nTAP

Copper input with copper or fiber output options Choose your analysis output:

SX										\$1	,	9	9	5
LX										\$1	,	9	9	5



#### Optical Fiber nTAP

Multiple split ratios Choose your port density:

Single channel	\$395
Four channel\$*	1,795
Six channel\$2	2,395

To learn more about how nTAPs can boost your network visibility and which configuration option is best for you, go to **www.networkTAPs.com/visibility** or call 866-GET-nTAP today. Free overnight delivery.\*





#### Good things come in small packages.

doors for better airflow.

Our small Low Profile Server Rack Cabinets have some very big features: • Vented top and bottom panels • Cable plate • Welded vented side panels with handle • Adjustable rack rails . Leveling feet • Optional casters Vented front and rear

Information Support Concepts. INC 714 N. Watson Rd • Ste., 302 • Arlington, TX 76011

Visit www.iscdfw.com or call 1-800-458-6255 for more information.

Solutions for IT - Network - Telecom Professionals. © 2004 Information Support Concepts Inc. all rights reserved











Tel: 408.727.1122 Fax: 408.727.8002

ReCURRENT

SANTA CLARA; CA 95054 INFO@RECURRENT.COM

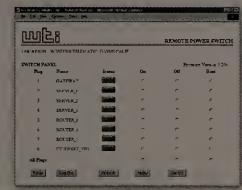
#### **Network Power Switches**

#### **Control Power on Any AC Powered Device ...** Via Web Browser, Telnet, **Modem or Local Terminal**

Servers, routers, and other electronic equipment occasionally "lock-up", often requiring a service call to a remote site just to flip the power switch to perform a simple reboot. With WTI's Remote Power Switches, you can perform reboot and On/Off control from anywhere!

- Web Browser Access for Easy Setup and
- **Encrypted Password Security**
- **Dual 15 Amp Power Circuits Total 30 Amps Maximum Load**
- 115 VAC and 230 VAC Models
- Up to Sixteen (16) Individual Outlets
- RS232 Modem / Console Port
- **Network Security Features**
- **Power-Up Sequencing**

Web Browser Interface







**IPS-1600** 

#### Yes, We are Customer Friendly!

- Two Year Warranty
- We Stock for Same Day Shipment
- 30 Day Return Policy
- ✓ Call or Email for an Online Demo

inputs

Model **NBB-1600** 

Kill F +

reaso.

Jan.

www.wti.com

western telematic incorporated

5 Sterling • Irvine • California • 92618-2517 • (800) 854-7226

#### **Sales Offices**

Carol Lasker, Associate Publisher/Vice President Jane Welssman, Sales Operations Manager Internet: clasker, jweissman@nww.com (508) 460-3333/FAX: (508) 460-1237



#### New York/New Jersey

Tom Davis, Associate Publisher, Eastern Region Elisa Della Rocco, Regional Account Director Agata Joseph, Senior Sales Associate Internet: tdavis, elisas, ajoseph@nww.com (201) 634-2300/FAX: (201) 634-9286

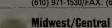


Elisa Della Rocco, Regional Account Director Internet: elisas@nww.com (508) 460-3333/FAX: (508) 460-1237



#### Mid-Atlantic

Jacqui DiBianca, Regional Account Director Renee Wise, Sales Assistant Internet: jdibian, rwise@nww.com (610) 971-1530/FAX: (610) 975-0837



Tom Davis, Associate Publisher, Eastern Region Agata Joseph, Senior Sales Associate Internet: tdavis, ajoseph@nww.com (201) 634-2314/FAX: (201) 712-9786



Don Seay, Regional Account Director Renee Wise, Sales Assistant Internet: dseay, rwise@nww.com (404) 504-6225/FAX: (404) 504-6212



#### Northern Galifornia/Northwest

Sandra Kupiec, Associate Publisher, Western Region Karen Wilde, Regional Account Director Courtney Cochrane, Regional Account Director Vanessa Tormey, Regional Account Manager Teri Marsh, Sales Assistant Jennifer Hallett, Sales Assistant Internet: skupiec, kwilde, ccochrane, vtormey, tmarsh, (510) 768-2800/FAX: (510) 768-2801



#### Southwest/Rockies

Becky Bogart Randell, Regional Account Director Internet: brandell@nww.com (949) 250-3006/FAX: (949) 833-2857



#### **Online/Integrated Solutions**

Kevin Normandeau, Vice President, Online Susan Cardoza, National Sales Director, Integrated Solutions Scott Buckler, Director of Integrated Solutions Stephanie Gutierrez, Online Acct. Manager, Integrated Solutions James Kalbach, Director of Integrated Solutions Debbie Lovell, Online Account Manager, Integrated Solutions Kate Zinn, Director of Integrated Solutions Denise Landry, Sales Coordinator Lisa Thompson, Sales Coordinator Internet: knormandeau, scardoza, sbuckler, sgutierrez, jkalbach, dlovell, kzinn, dlandry, lthompson@nww.com (508) 460-3333/FAX: (508) 861-0467



#### MARKETPLACE/EMERGING MARKETS

Donna Pomponi, Director of Emerging Markets Enku Gubaie, Manager of Marketplace/Emerging Markets Caitlin Horgan, Manager of Marketplace/Emerging Markets Jennifer Moberg, Manager of Marketplace/Emerging Markets Chris Gibney, Sales Operations Coordinator Internet: dpomponi, egubaie, chorgan, jmoberg, caibnev@nww.com (508) 460-3333/FAX: (508) 460-1192



#### ■ Network World, Inc.

118 Turnpike Road, Southborough, MA 01772 Phone: (508) 460-3333

#### TO SEND E-MAIL TO NWW STAFF

firstname\_lastname@nww.com

Evilee Thibeault, CEO/Publisher John Gallant, President/Editorial Director W. Michael Draper, Chief Operating Officer Eloni Brisbois, Administrative Planning Manager FINANCE

Mary Fanning, Vice President Finance Paul Mercer, Finance Manager Betty Amaro-White, Event Finance Manager

Patricia Duarte, Vice President Human Resources

#### Eric Cormier, Sr. Human Resources Generalist

TerryAnn Croci, Sr. Director of Customer Experience Nancy Sarlan, Corporate Marketing Communications Mgr. Barbara Sullivan, Senior Research Analyst Judy Schultz, Marketing Design Manager Cindy Panzera, Marketing Designer

#### PRODUCTION SERVICES

Greg Morgan, Senior Director, Production Services Karen Wallace, Senior Director, Advertising Operations Mike Guerin, Manager of Production Technologies JamiThompson, Sr. Production Coordinator Veronica Trotto, Online Operations Coordinator Jane Wilbur, Online Ad Traffic Coordinator Maro Eremyan, Advertising Coordinator Christina Pankievich, Advertising Coordinator

Richard Priante, Senior Director of Circulation Bobbie Cruse, Subscriptions Manager Mary McIntire, Sr. Circulation Marketing Manager

#### RESEARCH

Ann MacKay, Research Director

#### DISTRIBUTION

Bob Wescott, Distribution Manager/(508) 879-0700

#### IDC LIST RENTAL SERVICES

Amy Bonner, Account Executive P.O. Box 9151, Framingham, MA 01701-9151 Toll free: (800) 434-5478 ext. 6026/Direct:(508) 370-0826

#### SEMINARS, EVENTS AND IDC EXECUTIVE FORUMS

Neal Silverman, Vice President of Events & E. F. Mike Garity, Director of Business Development Michele Zarella, Director of Operations Dale Fisher, Senior Event Planner Jacqueline DiPerna, Event Coordinator
Karen Bornstein, Sales Operations Specialist Danielle Bourke, Event Operations Coordinator Andrea D'Amato, National Sales Director Events Kristin Ballou-Cianci, Event Regional Account Director Jennifer Sand, Regional Account Manager Cedric Fellows, Regional Account Manager Grace Moy, Exhibit Sales Manager Debra Becker, Dir., Marketing & Audience Development Sara Nieburg, Senior Marketing Manager Dori Smith, Event Database Manager Buster Paris, Marketing Specialist

#### **ONLINE SERVICES**

Kevin Normandeau, Vice President, Online Dan Gallagher, Director of Audience Development, Online Norm Olean, Director of Business Development, Online Adam Gaffin, Executive Editor, Online Melissa Shaw, Managing Editor, Online Jason Meserve, Multimedia Editor Sheryl Hodge, Sr. Online Copy Chief Deborah Vozikis, Design Manager Online CLIENT SERVICES

W. Michael Draper, Chief Operating Officer Sharon Stearns, Director of Client Services Leigh Gagin, Client Services Manager Kristin Miles, Client Services Specialist

#### **INFORMATION SYSTEMS/BUSINESS SERVICES**

W. Michael Draper, Chief Operating Officer Tom Kroon, Director of Systems Development
Anne Nickinello, Senior Systems Analyst
Puneet Narang, Manager of Database Technologies
William Zhang, Senior Software Engineer
Manay Seghal, Senior Software Engineer Rocco Bortone, Director of Network IT Peter Hebenstreit, Senior Network/Telecom Engineer Brian Wood, Senior Systems Support Specialist Frank Coelho, Senior Manager, Business Services Mark Anderson, Business Services Supervisor Linda Cavanagh, Business Services Administrator



Patrick J. McGovern, Chairman of the Board Pat Keneaty, CEO

Network World is a publication of IDG, the world's largest publisher of computer-related information and the leading global provider of information services on information technology. IDG publishes over 275 computer publications in 75 countries. Ninety million people read one or more IDG publishes each month. Network World contributes to the IDG lews Service, offering the latest on domestic and international computer news.

#### **■** Editorial Index

Advanced Destitu	17
Advanced Reality	69, 90
Apple Avaya	19
Avaya	
■ B	
BMC	8_
Brain Saving Technologies	19
Buffalo Technology	
■ C	
Cisco	68
■ E	
ECI Telecom	61
ESnet	12
LORet	
<b>■</b> G	
Google	6_
■ H	
HP	27_
=1	
IBM	6 07 00 66
Intel	6, 27, 29, 66
iller	00

■ J	
Juniper	68
Laurel Networks	61_
Liquid Computing	11_
■ M	
Microsoft	15
Montilio	88
■ N	
Nortel	6_
<u>• 0</u>	
Qwest	61_
■ R	
Red Hat	1, 27
<b>S</b>	
SAP	6
SMC	19
Sony	66
SyChip	10_
■ V	
Verizon Wireless	61

#### **■** Advertiser Index

Advertiser	Page #	URL
Adtran	91	www.adtran.com/rightprice
		mai.com/enterpriseapplications
Barracuda Networks	_7www.t	arracudanetworks.com/NECC
Belden Wire and Cable	64	www.BeldeniBDN.com
CDW Corp		CDW.com www.dell.com/altirus4
Dorian Software Creat		
	www.doci	ansoftware.com/withoutthebull
		http://finisarevents.webex.com
Fluke Networks		www.flukenetworks.com/PNA
Foundry Networks	75	www.foundrynet.com/sx
		geeksoncallfranchise.com
Global Crossing	2.3	globalcrossing.com
Hewlett Packard		www.hp.com/go/bladesmag52
IBM Corp	30-31	ibm.com/eserver/helpishere1
Information Support C	oncepts 85	www.iscdfw.com
Internet Security Syste	ems.lnc 25	www.iss.net/ESP/network
		www.ipswitch.com
Juniper Networks Inc.	21 www	/juniper.net/solutions/literature
		www.selftestsoftware.com
		www.lantronix.com/slcwp
Microsoft Corp	22-23	microsoft.com/getthefacts
Microsoft Corp	79	microsoft.com/wssystems
Netscaler Inc	9	www.netscaler.com/5x
NetSupport Inc	82	www.netsupport-inc.com
Network Instruments LL	.C. 82 www.r	etworkinstruments.com/analyze
Network Instruments L	LC 85 w	ww.networkTAPs.com/visibility
Novell Inc	11, 13, 15	novell.com
Ontima FPS	80	www.ontimaens.com
Packeteer Inc		www.packeteer.com/four www.recurrent.com
Recurrent Technologies	Inc. 85	www.recurrent.com
Rose Electronics	84	www.rose.com
Server Technology Inc.	84	www.servertech.com
Spirent Communication	s 20 www	.spirentcom.com/go/securitytest
SunGard	73	www.availability.sungard.com
		urfcontrol.com/go/threatshield
		www.trendmicro.com/spyware
Tripp.Lite.	17	www.tripplite.com/nww2
Websense	77	www.websense.com/mobile5
Western Telematic Inc.	85	www.websense.com/mobile5
Xerox Corp	26	xerox.com/office
Data Center Supplei	ment	
ADIC	7	www.adic.com/i2k

Data Center Supplement ADIC	7	www.adic.com/i
American Power Conversion	13	http://promo.apc.co
AT & T	11	att.com/flowe

Avocent	27.	vww.avocent.com/stayincontrol
CapRock Communications	14	www.caprock.com
Ciena Corp	15	ciena.com/storage
Cisco Systems	24	cisco.com/poweredby
Cisco Systems	25	cisco.com/go/cpnpow1
Computerwise	20	www.computerwise.com
Cyclades Corp	21	www.cyclades.com/nw
El Dupont Info Tech Product	s Group 5	teflon.com/cablingmaterials
EMC Corp	17	www.EMC.com/continuity
Postini Inc.	2	www.postini.com/nw
Quantum Corp	28	www.quantum.com/helpme
Raritan Computer	23_	Raritan.com/1428
Riverbed Technology Inc.	9	www.riverbed.com/NW
SonicWALL 19	www	sonicwall.com/home/gav.asp

#### Network World Fusion - www.networkworld.com 3Com Network Associates

Allot Communications Chantry Networks Cisco Systems, Inc Computer Associates DuPont EMC Corp Imprivata
Intel Corporation
IronPort Systems
Juniper Networks Inc
Lucent Technologies

Nortel Networks
Oracle Corporation
PatchLink Corporation
Program Deliverables
Owest Communications
RADWARE RSA Security Inc Statscout Pty Ltd
Texas Instruments Trend Micro TrendsMedia Inc Tripp Lite VeriSign Inc Verizon Wireless Broadband

These indexes are provided as a reader service. Although every effort has been made to make them as complete as possible, the publisher does not assume liability for errors or omissions.

\*Indicates Regional Demographic

#### ■ Network World, 118 Turnpike Road, Southborough,

Periodicals postage paid at Southborough, Mass., and additional mailing offices. Posted under Canadian International Publication agreement #40063800. Network World (ISSN 0887-7661) is published weekly, except for a single combined issue for the last week in December and the first week in January by Network World, Inc., 118 Turnpike Road, Southborough, MA 01772-9108.

Network World is distributed free of charge in the U.S. to qual-

To apply for a free subscription, go to www.subscribenw.com or write Network World at the address below. No subscriptions accepted without complete identification of subscriber's name, job function, company or organization. Based on the information supplied, the publisher reserves the right to reject non-qualified requests. Subscriptions: 1-508-490-6444.

Nonqualified subscribers: \$5.00 a copy; U.S. - \$129 a year; Canada - \$160.50 (including 7% GST, GST#126659952); Central & South America - \$150 a year (surface mail), all other countries - \$300 a year (airmail service). Four weeks notice is required for change of address. Allow six weeks for new subscription service to begin. Please include mailing label from front cover of the publication.

Network World can be purchased on 35mm microfilm through University Microfilm Int., Periodical Entry Dept., 300 Zebb Road, Ann Arbor, Mich. 48106.

PHOTOCOPYRIGHTS: Permission to photocopy for internal or personal use or the internal or personal use of specific clients is granted by Network World, Inc. for libraries and other users registered with the Copyright Clearance Center (CCC), provided that the base fee of \$4.00 per copy of the article, plus 50 cents per page is paid to Copyright Clearance Center, 27 Congress Street, Salem, Mass. 01970.

POSTMASTER: Send Change of Address to **Network World**, P.O. Box 3090, Northbrook, IL 60065. Canadian Postmaster: Please return undeliverable copy to PO Box 1632, Windsor, Ontario N9A7C9.





Copyright 2005 by Network World, Inc. All rights reserved. Reproduction of material appearing in Network World is forbidden without written permission.

Reprints (minimum 500 copies) and permission to reprint may be purchased from Reprint Management Services at (717) 399-1900 x129 or mshober@reprintbuyer.com.



Bandwidth, compression, or probes simply won't solve your WAN performance problems. Only Packeteer enables you to protect vital applications, pace greedy traffic, limit recreational usage, and block malicious traffic—so all your locations will run as smoothly as HQ. Respond now for our free handbook, *The 4 Essentials of WAN Optimization*, and learn how to optimize any WAN to ensure maximum performance for critical applications such as SAP, Oracle, Citrix, VoIP, Email, and hundreds more. **Go to www.packeteer.com/four.** 



Packeteer — the WAN optimization leader with over 7,000 customers in 50+ countries extends WAN application control to the edge of your network.

© 2005 Packeteer Packeteer and the Packeteer logo are registered trademarks of Packeteer Inc. All rights reserved. All other product or company names are the property of their respective owners



#### FREE HANDBOOK

Discover the key components for ultimate WAN performance, while eliminating the root causes of lethargic WAN applications. Download your free copy now at www.packeteer.com/four.



### Montilio looks to reduce file server latency

**BY DENI CONNOR** 

Storage start-up Montilio is set to announce a network adapter and software it says will accelerate file server performance by as much as three to six times.

At Storage Decisions in Chicago this week, the company will unveil RapidFile, a PCI-Express adapter, which loads proprietary File Server Re-Director (FSRD) software that bypasses the server memory and PCI bus, thus reducing latency and speed-

ing file-server processing, Montilio says.

CEO Michael Tsuk says that traditionally two activities are involved in file serving — processing client requests for data and moving data between the storage subsystem and client — both of which cause latency. The latter process takes considerably more bandwidth.

Companies such as Alacritech and Neterion have attempted to alleviate this burden by using Remote Direct Memory Access and TCP Offload Engines, approaches Tsuk says are more designed to accelerate network traffic than make file processing more efficient.

FSRD creates an alternate data path between the client and storage and redirects traffic across it, thus alleviating the server memory from processing file data.

Arun Taneja, founder of Taneja Group, says RapidFile could reduce the need for customers to put in faster, more efficient, network-attached storage (NAS).

"What Montilio offers is a way for a Linux file server to deliver NAS-like performance, using standard server software,"Taneja says. "The add-in card is a simple way to jazz up

#### PROFILE: MONTILIO

Headquarters: Herzliya, Israel

Founders: CEO Michael Tsuk, formerly of Gilat Communications; VP R&D Eli Stein formerly of Charletto's Web

Product: RapidFile, a file server

Funding: \$4 million from Intel Capital, Cedar Fund, Evergreen Venture Partners

Fun fact: Company name derived from a restaurant where founders were dining

thousands of general-purpose servers that are being used as file servers. RapidFile could reduce, if not eliminate, the need for many to buy NAS boxes."

The RapidFile adapter has two Gigabit Ethernet ports that connect to the network and two 2G-bit Fibre Channel ports for connecting to the storage system.

RapidFile, which works in Linux file servers, costs \$3,900. A Windows version could be available in the fourth quarter.

#### Intel preps PC mgmt. advances

**BY TOM KRAZIT** 

Intel plans to release a chipset and network adapter designed to bring new IT management technologies to business PCs.

The company last week said its 945G chipset and Pro/1000 PM network chip will begin to ship in PCs by the end of May.

The features, such as Active Management Technology (AMT), are part of Intel's strategy to emphasize other aspects of system performance rather than raw processing power. AMT is designed to let IT administrators access a protected portion of the PC to install software updates, run diagnostic programs or take inventory of their sys-

tems even if the PC is not turned on PC buyers will need to make sure they purchase a system with the Pro/1000 PM network adapter to use this capability, Intel says.

New PCs with the 945G chipset now will become part of an Intel program to help IT managers avoid changing their software images or managing a network of PCs with different image types, Intel says. Intel guarantees IT departments that buy PCs based on a certain platform will not have to update their software images because of hardware changes for at least a year.

Krazit is a correspondent with the IDG News Service.





## INTRODUCING E-LEARNING It's like an all you can eat buffet for your brain.

Fill your brain with essential IT knowledge with e-Learning from Self Test. Increase your IT expertise through a series of online tutorials and interactive tests designed to prepare you for the tough tests you face every day, as well as the tough task of certification. And the best part—learn when you want at your own pace. There's no better way to study. e-Learning is smart, economical and effective. Get it today. Your brain will thank you for it. Visit our website at www.selftestsoftware.com.

www.selftestsoftware.com - 1-800-244-7330

© 2005 Kapian IT, Inc. Ail rights reserved. Self Test Software is a registered trademark of Kapian IT, In

Self Test



This Free Event is Coming to a City Near You

BOSTON, MA June 21, 2005

DENVER, CO June 23, 2005

## get the cures to the top ten broadband headaches

- 10. WLAN deployments: They're cheaper. They're more effective. So what's the catch?
- 9. What the big picture of wireless doesn't reveal.
- 8. The not-so-obvious trends and opportunities in wireless LANs.
- 7. The new 802.11 standards and what to do about them.
- 6. Wide-area wireless: What now?

...and 5 more at the event!

#### who will be there?

- Craig Mathias, Principal, Farpoint Group an advisory and systems-integration firm
- ► IT professionals with authority over broadband technology purchasing and implementation, including:
- Network and IT managers/directors
- VPs of Networking
- VPs of IT
- CTOs , ClOs, CSOs

Wireless and Mobility:

COMMANDING BROADBAND EVERYWHERE

## compelling & dynamic choices

Enterprises face crucial questions about their wireless networks: Which devices? Which apps? Which technologies? And why?



ireless & Mobility: Commanding Broadband Everywhere is the breakthrough you've been waiting for. A choice-simplifying, direction-setting day where you seize the future of wireless LAN and WAN technologies, wireless tools and services, wireless subscriber units, wireless applications.

#### Seating is limited.

Register now at www.networkworld.com/WMS5EA1 or call Dori Smith at 1-800-643-4668

Past sponsors of our Wireless and Mobility Tour held earlier this year include: Bluesocket, Chantry, Colubris, Foundry and Symbol. Join Colubris Networks, Xirrus and other wireless service providers this June in Boston and Denver. For updates on new event partners, please visit our site at: www.networkworld.com/WMS5EA1

PRESENTING SPONSOR



**EXHIBITING SPONSOR** 



#### BackSpin Mark Gibbs



#### **Shattered Mac illusions**

have been Macified. After not owning a Macintosh for more than I2 years I finally decided that the undeniable coolness and beauty of the hardware and particularly of OS X meant that it was time to get religion!

The beast, which arrived a couple of weeks ago, is a Power Mac G5 with dual 2-GHz processors and 1.5G bytes of RAM running OS X Tiger. What a gorgeous piece of engineering! It is an elegant design even under the hood: When you need to take off the side to, for example, add extra RAM, one latch frees the panel. And all the subsystems are plug-ins, making it incredibly easy to work on. Heaven.

Then when you run up OS X, again, wow. The operating system has a remarkable polish — just as if someone had thought about the design as a whole rather than finding and assembling a collection of spare parts and forcing them to fly in formation.

Anyway, back to the Macification: First I fooled around checking out all the cool new features. Tiger has a lot of really well-implemented new stuff that makes it significantly more powerful.

Next I decided to load my photographs into iPhoto. My photo collection is fairly large, weighing in at 14,618 files for a total of 18.7G bytes.

I copied the files to the Mac from my Windows desktop, an XP system that is misbehaving to the point where it is time to wipe it and start again. <digression> It is amazing that XP systems can get to a condition where it is easier to erase and re-install everything than diagnose and fix what's wrong. </digression>

So now that I had the image files on the Mac I could start loading them into iPhoto. All seemed to go well with iPhoto doing its indexing and thumbnailing, then it finished — crash.

I restarted iPhoto. The program ran for a couple of minutes then, thud! I re-imported the photos. IPhoto finished the import, stayed up again for a couple of minutes, then thud. In the middle of this the 10.4.1 release of OS X came out, which apparently included some iPhoto improvements, but nothing I could find mentioned the problems I was seeing. I applied the upgrade and resorted to clearing out about 5,000 pictures and iPhoto seemed to become stable again.

Now, let's review: This was a brand-new machine, the system detected no problems and iPhoto hadn't been used before, but handling just less than 15,000 images made it blow up. And I thought Mac applications were generally considered to be better than Windows applications. Evidently this is not the case.

According to discussions I've had on lists and in Apple forums, there's no obvious explanation for my

problems with iPhoto. According to Gary Stock, CTO of Exfacto: "From a Mac perspective, the surprising part is that iPhoto even tried, rather than warning you when you crossed some threshold or advising you to reduce the dataset."

Exactly! Which makes me think the problem is more fundamental than bad error-handling in the application, unless you are willing to believe that Apple's programmers are not very skilled.

From my experiences with Windows and now OS X, maybe when it comes to sophisticated, multimedia applications it doesn't matter what platform we're using. It may be the case that humans are not capable of creating stable software for the level of complexity required.

Maybe there's a sort of code-complexity limit that we have crossed in the latest generations of computer systems that makes software stability probabilistic rather than deterministic. If so, it makes for some interesting implications for systems engineering.

To begin with, managing systems in the future might be more like psychiatry than programming. Despite these snafus I still love the Mac. It is just that my illusions are shattered.

Condolences to backspin@gibbs.com. Check out Gearblog (www.networkworld.com/weblogs/gear blog) while you're at it.

## CTBUZZ News, insights, opinions and oddities

#### By Paul McNamara

#### **Addressing 'DDoS extortion'**

Paying an extortionist a few thousand dollars to leave your network alone

might make bottom-line business sense if the alternative is enduring a distributed denial-of-service attack that could cost your company millions in lost revenue and public relations damage.

The trouble is that paying criminals to leave you be is also dangerously shortsighted — especially from a broader societal standpoint — and ought to be every bit as much against the law as extortion.

That's certainly not the case today and is unlikely to become so any time soon, given the clout of big business and the dominant strain of hands-off regulation in Washington. And that might be one reason why reports of distributed DoS-based extortion attempts are on the rise. "It's happening enough that it doesn't even raise an eyebrow anymore," says Ed Amoroso, chief information security officer at AT&T, in a story last week by two of my colleagues, Network World senior editors Denise Pappalardo and Ellen Messmer (see www.networkworld.com, DocFinder: 7238).

Although the problem is getting worse, it has been around for several years. I first heard of the network extortion scam at a 2003 security conference where a speaker spun disturbing tale after disturbing tale of corporate executives both paying up and clamming up.

The reticence of victims to speak out makes quantifying the phenomenon difficult. The FBI tells us it pursues such cases on a regular basis, although a bureau spokesman was unable to provide specifics. But the brazenness and even the 'reasonableness" of the criminals speak to the comfort with which they work: Victims typically are asked to wire payment to offshore banks, and, in some cases, the perpetrators are willing to negotiate on the price.

Current countermeasures - anti-distributed DoS products and services, cou-

pled with anemic law enforcement — offer limited hope of turning this tide. So what should be done?

There ought to be a law that takes the decision making out of the victims' hands. Let's start with the easiest part: Irrespective of whether a company chooses to pay, reporting such crimes to law enforcement should be mandated under threat of civil and criminal penalties — penalties severe enough to persuade even the most bottom-line-conscious business executive to comply.

Yes, criminal prosecution of extortion might be difficult, most notably in cases in which criminals operate from countries unfriendly to the U.S. But there can be no reasonable hope of legal deterrence without a universal embrace of the first step, which is calling the cops.

A tougher call is whether payments to extortionists should be prohibited.

Some will argue that I'm blaming the victim and that it's the victim's right to pay. They will equate the decision to that of paying a kidnapper to secure the safe return of a loved one.

The analogy is weak, but, yes, in a sense I am blaming the victim. After all, these extortion attempts are crimes against all online businesses -- against all of us not merely those being targeted today. As long as companies are willing to pay, the ranks of extortionists will continue to grow.

Addressing the responsibilities of business executives in no way lessens the need to step up criminal enforcement and diplomatic pressure on governments that countenance criminals.

Congress might even get creative here. How about funneling any fines collected from businesses into a pool that would be used to offer discounted distributed DoS-attack insurance to companies that pledge to abide by the reporting and payment rules?

Details aside, something has to change. The alternative is to continue to treat extortion payments as just another business expense. . . . And that is nuts.

Have a better idea? The address is buzz@nww.com.

## Ine m techno

**ADTRAN** 802.3af

NetVanta 1224R/1224STR Series All-in-One Access Platform with Switch/Router/Firewall/VPN/DSU/CSU

NetVanta 1224/1224ST Series Managed Fast Ethernet and Powered Ethernet Switches

> NetVanta 1524ST Managed Gigabit Ethernet Switch



NetVanta 340 Business-class ADSL2+ Router



NetVanta 3200 Routers with Firewall/VPN/Voice/Dial Backup

NetVanta 3205/3305/4305 Firewall/VPN/Voice/Dial Backup



NetVanta 5305



NetVanta 2050/2054/2100 Home Office/Small Office VPN Gateways with Firewall/Multi-Port Switch









#### NetVanta® Switches, Routers, and VPN Solutions.

Is voice and data networking costing you more than it should? You no longer have to pay premium prices for brand name gear to perform customary internetworking tasks. With the NetVanta Series from ADTRAN®, you can implement the exact

internetworking functionality you need, at a cost that's Lower network often 50% less than competing brand name solutions. costs without Choose from *switching*, *routing*, *and VPN* platforms. compromising Modular chassis and *deep product lines* let you pick quality, performance, and choose just the right solution for any application or support — with data, voice, VoIP, Internet, backup, and management— NetVanta. across networks ranging from 56 kbps to GigE. Every

> solution is backed by a 100% satisfaction guarantee from ADTRAN, unlimited telephone technical support (before and after the sale), free firmware upgrades, and a full 5-year warranty,

Why pay more (when you don't have to)?

Register to win a free NetVanta 1224STR now! www.adtran.com/rightprice

> Have a question about network design? How to implement VoIP in your network? Our network engineers are standing by.

> 800 597 9602 Technical Questions 877 280 8416 Where to Buy

The Network Access Company





# DON'T LET SPYWARE SABOTAGE YOUR ENTERPRISE.

#### The next threat is no threat with Trend Micro.

Expose and eradicate spyware with Trend Micro's Enterprise-class, multi-level, anti-spyware solutions. They're the only solutions that block and clean at the gateway—the most effective point of control. Trend Micro. #1 global leader at the gateway and industry pioneer. Whether it's a virus, worm, spyware, or spam, we've got you covered.

For a FREE evaluation and IDC whitepaper, go to www.trendmicro.com/spyware



